DOWNLOAD PDF CONSERVATION OF PAINTING

Chapter 1 : Paintings â€" The Conservation Center

Conservation is a rich and complex field and, at its best, a collaborative one, requiring the overlapping expertise of the art historian, the conservator, and the conservation scientist in fashioning appropriate solutions to the diverse problems presented by the preservation of our collective.

Play media An early video showing some activities in a conservation laboratory at the Rijksmuseum A temporary windowed partition along restoration work area in the cloister of the Church of St. Trophime, Arles The care of cultural heritage has a long history, one that was primarily aimed at fixing and mending objects for their continued use and aesthetic enjoyment. During the 19th century, however, the fields of science and art became increasingly intertwined as scientists such as Michael Faraday began to study the damaging effects of the environment to works of art. Louis Pasteur carried out scientific analysis on paint as well. The society was founded by William Morris and Philip Webb , both of whom were deeply influenced by the writings of John Ruskin. Since , Harvard University wraps some of the valuable statues on its campus, such as this " Chinese stele ", with waterproof covers every winter, in order to protect them from erosion caused by acid rain. He not only developed a scientific approach to the care of objects in the collections, but disseminated this approach by publishing a Handbook of Conservation in In the United Kingdom, pioneering research into painting materials and conservation, ceramics, and stone conservation was conducted by Arthur Pillans Laurie , academic chemist and Principal of Heriot-Watt University from Alexander Scott in the recently created Research Laboratory, although he was actually employed by the Department of Scientific and Industrial Research in the early years. The creation of this department moved the focus for the development of conservation theory and practice from Germany to Britain, and made the latter a prime force in this fledgling field. In the United States , the development of conservation of cultural heritage can be traced to the Fogg Art Museum , and Edward Waldo Forbes, its director from to He encouraged technical investigation, and was Chairman of the Advisory Committee for the first technical journal, Technical Studies in the Field of the Fine Arts, published by the Fogg from to Importantly he also brought onto the museum staff chemists. Rutherford John Gettens was the first of usch in the US to be permanently employed by an art museum. He worked with George L. Stout , the founder and first editor of Technical Studies. Gettens and Stout co-authored Painting Materials: A Short Encyclopaedia in , reprinted in This compendium is still cited regularly. Oliver Brothers is believed to be the first and the oldest continuously operating art restoration company in the United States. The focus of conservation development then accelerated in Britain and America, and it was in Britain that the first International Conservation Organisations developed. The International Institute for Conservation of Historic and Artistic Works IIC was incorporated under British law in as "a permanent organization to co-ordinate and improve the knowledge, methods, and working standards needed to protect and preserve precious materials of all kinds. Art historians and theorists such as Cesare Brandi have also played a significant role in developing conservation science theory. In recent years ethical concerns have been at the forefront of developments in conservation. Most significantly has been the idea of preventive conservation. This concept is based in part on the pioneering work by Garry Thomson CBE , and his book the Museum Environment, first published in Although his exact guidelines are no longer rigidly followed, they did inspire this field of conservation. These take the form of applied ethics. Ethical standards have been established across the world, and national and international ethical guidelines have been written. One such example is: American Institute for Conservation Code of Ethics and Guidelines for Practice [16] Conservation OnLine provides resources on ethical issues in conservation, [17] including examples of codes of ethics and guidelines for professional conduct in conservation and allied fields; and charters and treaties pertaining to ethical issues involving the preservation of cultural property. As well as standards of practice conservators deal with wider ethical concerns, such as the debates as to whether all art is worth preserving. Collections care Many cultural works are sensitive to environmental conditions such as temperature , humidity and exposure to visible light and ultraviolet radiation. These works must be protected in controlled environments where such variables are maintained within a range of damage-limiting levels. For example, watercolour paintings usually require shielding from

sunlight to prevent fading of pigments. Collections care is an important element of museum policy. It is an essential responsibility of members of the museum profession to create and maintain a protective environment for the collections in their care, whether in store, on display, or in transit. A museum should carefully monitor the condition of collections to determine when an artifact requires conservation work and the services of a qualified conservator. Work of preventive conservation in a rock wall with prehistoric paintings at the Serra da Capivara National Park. The work consists of filling the cracks to prevent the fragmentation of the wall. Interventive conservation[edit] Furniture conservation â€" Re-glueing loose element of solid nut marriage chest probably Italy, 19th century A principal aim of a cultural conservator is to reduce the rate of deterioration of an object. Both non-interventive and interventive methodologies may be employed in pursuit of this goal. Interventive conservation refers to any direct interaction between the conservator and the material fabric of the object. Interventive actions are carried out for a variety of reasons, including aesthetic choices, stabilization needs for structural integrity, or cultural requirements for intangible continuity. Examples of interventive treatments include the removal of discolored varnish from a painting, the application of wax to a sculpture, and the washing and rebinding of a book. Ethical standards within the field require that the conservator fully justify interventive actions and carry out documentation before, during, and after the treatment. Although this concept remains a guiding principle of the profession, it has been widely critiqued within the conservation profession [19] and is now considered by many to be "a fuzzy concept. Conservation laboratories[edit] The Lunder Conservation Center. Conservation staff for both the Smithsonian American Art Museum and the National Portrait Gallery are visible to the public through floor-to-ceiling glass walls that allow visitors to see firsthand all the techniques that conservators use to examine, treat and preserve artworks within a functioning conservation Laboratory. Conservators routinely use chemical and scientific analysis for the examination and treatment of cultural works. The modern conservation laboratory uses equipment such as microscopes , spectrometers , and various x-ray regime instruments to better understand objects and their components. The data thus collected helps in deciding the conservation treatments to be provided to the object. The results of this work was the report A Public Trust at Risk: The report made four recommendations: Institutions must give priority to providing safe conditions for the collections they hold in trust. Every collecting institution must develop an emergency plan to protect its collections and train staff to carry it out. Every institution must assign responsibility for caring for collections to members of its staff. Individuals at all levels of government and in the private sector must assume responsibility for providing the support that will allow these collections to survive. The document listed the following as priorities for the next decade: Museums will fulfil their potential as learning resources pp 7â€" Museums will be embedded into the delivery of education in every school in the country. Understanding of the effectiveness of museum education will be improved further and best practice built into education programmes. Museums will embrace their role in fostering, exploring, celebrating and questioning the identities of diverse communities pp 11â€" The museum sector must continue to develop improved practical techniques for engaging communities of all sorts. Government and the sector will find new ways to encourage museums to collect actively and strategically, especially the record of contemporary society. The sector will develop new collaborative approaches to sharing and developing collections and related expertise. Find more varied ways for a broader range of skills to come into museums. Improve continuing professional development. Museums will work more closely with each other and partners outside the sector pp 23â€" A consistent evidence base of the contribution of all kinds of museums to the full range of public service agendas will be developed. There will be deeper and longer lasting partnerships between the national museums and a broader range of regional partners. The conservation profession response to this report was on the whole less than favourable, the Institute of Conservation ICON published their response under the title "A Failure of Vision". The original consultation paper made quite extensive reference to the importance of collections, the role of new technologies, and cultural property issues, but this appears to have been whittled away in the present document. A national survey to find out what the public want from museums, what motivates them to visit them and what makes for a rewarding visit. A review of survey results and prioritisation of the various intrinsic, instrumental and institutional values to provide a clear basis for a year strategy HR consultants to be brought in from the commercial sector to review

recruitment, career development and working practices in the national and regional museums. A commitment to examine the potential for using Museum Accreditation as a more effective driver for improving recruitment, diversity, and career development across the sector. DCMS to take full account of the eventual findings of the current Commons Select Committee enquiry into Care of Collections in the final version of this document The adoption of those recommendations of the recent House of Lords enquiry into Science and Heritage which have a potential impact on the future of museums. Art conservation training Training in conservation of cultural heritage for many years took the form of an apprenticeship , whereby an apprentice slowly developed the necessary skills to undertake their job. For some specializations within conservation this is still the case. However, it is more common in the field of conservation today that the training required to become a practicing conservator comes from a recognized university course in conservation of cultural heritage. Conservation of cultural heritage is an interdisciplinary field as conservators have backgrounds in the fine arts , sciences including chemistry , biology , and materials science , and closely related disciplines, such as art history , archaeology , studio art , and anthropology. They also have design, fabrication, artistic, and other special skills necessary for the practical application of that knowledge. Within the various schools that teach conservation of cultural heritage, the approach differs according to the educational and vocational system within the country, and the focus of the school itself. This is acknowledged by the American Institute for Conservation who advise "Specific admission requirements differ and potential candidates are encouraged to contact the programs directly for details on prerequisites, application procedures, and program curriculum". Associations and professional organizations[edit] Main article: Conservation associations and professional organizations Societies devoted to the care of cultural heritage have been in existence around the world for many years. One early example is the founding in of the Society for the Protection of Ancient Buildings in Britain to protect the built heritage, this society continues to be active today. These organizations exist to "support the conservation professionals who preserve our cultural heritage". International cultural heritage documents[edit] Year.

Chapter 2 : Canberra Paintings Conservation Service

Painting Conservation, Step by Step Some people call conservators the "magicians" of the art world Oftentimes, the colors of older paintings have a brown and yellow tint caused by an organic varnish that has yellowed with the passage of time.

Making the decision to have your painting restored is a serious one. When one is contemplating some sort of medical treatment, it is expected that they will research their condition, the procedure, and their physician. Just as with a medical treatment, you should try to collect as much information on the condition of your painting and the probable outcome of its restoration and gather opinions from more than one conservator. Here are some guidelines to understanding the process of conservation and how to find a conservator. What Does "Painting Restoration" Mean? Getting your painting "restored" can mean many things. Paintings need care to keep them looking their best for the longest possible time. As soon as a painting is made it begins to age. The natural aging of the painting alone in addition to the accumulation of dirt over the years requires the attention of a trained paintings conservator. Even if a painting is cared for and displayed properly, it will still experience the effects of natural aging and dirt accumulation. What Training is Needed to Become a Conservator? A conservator acquires skill and ability through study and practical experience. Most restorers today have completed a rigorous course of study through an accredited post-graduate program combined with several years of internships. However, there are still many top-quality restorers who are apprentice-trained. In practice, a restorer also needs to be able to interpret, if not obtain, documentation photographs, infra-red photographs, ultraviolet photographs and x-rays. That a restorer should know how to paint is assumed as part of their manual dexterity. How do I Select a Conservator? Most museums, when asked, will offer a list of various restorers in the area. It is up to the painting owner to select a restorer. The list of names they offer is a convenience and courtesy to the public but never a warranty. To find a conservator affiliated with a professional organization, the American Institute for Conservation AIC can supply you with a list of conservators in your area. Painting owners are advised to consider the recommendations from museums, the AIC, and reputable collectors and evaluate several conservators. Selection of a conservator should be explored thoroughly. What to Expect From Your Conservator If you select a conservator from a list of names, get in touch with them and ask if they can come to see the painting of if you can bring it to them for examination if its condition. Before you write or telephone, it is wise if you have all the facts about the painting at hand: Once the contact has been made and the conservator has examined your painting, you van ask them for a report on its condition, their proposed treatment, and an estimate of costs involved. In some instances, several different treatments may be suggested with an explanation of the result of each will have and a list of ranging costs. The decision as to which plan is acceptable may depend upon the value of the painting to the owner and the cost of the work. When financially possible, it is always wisest to carry out the proposal which will best preserve the painting. Danger Signals in a Restorer A good practitioner has no need for secrecy for they prospers according to the excellence of their performance. For this reason, it is wise to avoid any restorer who declines to tell you what they propose to do and insists that their treatment is a private secret, the telling of which would endanger their income. The Expected Lifetime of a Painting In the care of paintings, it is essential to consider the continuance of existence. All things being equal, the life expectancy of a painting is much longer than the life of a man. There are two points to keep in mind. First, that the treatment employed should be the best for the immediate preservation of the painting. Second, that it should be executed so that any future removal of the work can be accomplished without in any way endangering the original painting. Most paintings have already experienced some conservation measures, and they will require conservation in the future. Any present treatment should be done for the best reasons and with the best materials that are available now to preserve the painting for the future. Selected Bibliography Carr, Dawson W. The John Paul Getty Museum, Columbia University Press,

Chapter 3 : Conservation-restoration of cultural heritage - Wikipedia

- In many ways the artists' materials are what the musical notes are for a composer. The artist brings together a disparate group of materials, assembles them into a composition, and what we see of that composition is on the canvas.

Acrylic paintings[edit] Acrylic Paintings were introduced in the s and the material differs from oil paint in chemical and physical properties. There are two types of Acrylic paints used in acrylic paintings. There is solvent-based and water-based. Solvent-based acrylic paints are soluble in mineral spirits, and water-based acrylic paints are water-soluble. Acrylic paint differs from oil paint in both its quick drying time, and how the paint dries. Acrylic paint dries in as little as thirty minutes, and dries by the evaporation of solvent of water. Due to the soft nature of the paint attracts and hold dirt and debris creating difficulty when cleaning resulting in darkening colors over time. Due to the characteristic of acrylic paint, varnishes will diminish top layers of the paint and effect the colors vibrancy. Storage of acrylic paintings should be clean and free of dust and heat-below room temperature is best as it will reduce further softening of the top layer of the paint. Exposing acrylic paintings to temperatures ranging near sub zero will case damaging cracking. Acrylic paint is highly susceptible to mold growth. This is a growing concern for artists and conservators as removal causes some degree of damage to the original paint. Conservation and restoration methods[edit] Preventive care seems to be the best method of conservation. However, after more than 10 years of investigation, conservators are now better able to understand the risks of swelling, extraction, and gloss changes that are associated with surface cleaning treatments. Wet cleaning systems are now being developed that help to minimize the risks associated with cleaning acrylic paints. These dyes are not a typical dye, but rather a pigment that is suspended in a carrier or resin. This pigment is what gives off a glow when exposed to ultraviolet light. This glow or light is created by the energy that is released from the pigment. While the fluorescent paint layers reflect light, the paint layer darkens over time and decreases in fluorescence. This is because the brightening agent that is mixed into the paint is not stable. Some fluorescent paintings can only be displayed in the dark with UV-lights. These requirements can make choosing appropriate lighting and exhibition and storage space for preventive conservation challenging. For fluorescent paintings that are displayed in dark rooms with UV lights, it is recommended to have an automatic lighting system. The age of the fluorescent pigments must be determined in order to develop a close matching pigment use for retouching. A painting can lose its effect under UV-light if the retouches and fillings are not closely matched and are too light or too dark. These ingredients are mixed together to create a thick paste that dries quickly, but can take six to twelve months before it completely cures. These include changes in the work due to unstable and fugitive pigments. The aging of a paintings supports and ground will also impact the paint layer. For example, cracks can form in a gesso ground due the embrittlement and movement of its support, then become visible in the paint film. Tempera paintings are thought to be more resistant to materials typically used during cleanings. However, they are susceptible to abrasions from routine dusting, washings, and removal of old varnish layers. It is unclear how tempera paintings were originally varnished due to the need for sensitive methods of analysis. Modern tempera paintings are almost always unvarnished and more prone to mold attacks. Enamel paints are oil, latex, alkyd, and water based. This paint dries rapidly and has a glossy finish once dry. These moves may have taken a toll on its condition. The paint flaked, and the original stretcher weakened causing the painting to have a noticeable sag. A completed painting is then finished by taking a source of heat to reheat the surface and fuse it together. Encaustic paintings do not require a varnish, are resistant to moisture, and do not yellow. However, the waxes used in encaustic paints can soften or melt above certain temperatures. This may cause the upper layers to slide or detach and cause irreversible damage. Conservation and restoration methods[edit] Surface cleaning on encaustic paintings can typically be done with distilled water and swabs is sufficient. For more challenging cleanings, solutions made of beeswax and carbon tetrachloride can be used. One of the biggest challenges in treating encaustic paintings is identifying the different waxes used to determine the appropriate treatments. Infra-red photography and gas chromotography can be used to identify the various types of waxes. These types of paintings are susceptible to damage from vandalism, time, environmental

stressors, and climate changes. Humidity and water damage cause mold to develop. The mold aspergillus versicolor can grow on frescos and consume nutrients effectively causing pigment discoloration and wall detachment from rot. Preventive conservation[edit] Ideally, buildings with frescos would be outfitted with central air with humidity adjusting features to keep the paintings in a cool and dry environment with low humidity. Frescos can be found typically in old churches and other ancient structures such as temples and tombs. These types of structures can be limited with additional means like environmental controls. These pollutants can be physical, chemical, or biological. The many layers can deteriorate from the materials chemical compositions reacting to pollutants or environmental conditions such as humidity, temperature, light, and pH. Chemical Degradation- Evident with pigment discoloration, stains, and the presence of biofilm. Physical Degradation- Evident with cracking of layers. Surface repairs for frescos can be less invasive. Conservators can remedy cracks and minor detachments of frescos with injections of epoxy resin containing micronized silica and lime putty. It is then heated, filtered, and applied in thin layers to supports such as wood or metal. The lacquer is left to cure before it is polished, and another layer is added. The number of layers may vary, and each can be left in its natural transparent state, or colored with pigments to create Lacquer painting. Lacquer is susceptible to cracks and loose joins from fluctuating temperatures and relative humidity. Extended exposure to light can also cause lacquer to lose its durability. Avoiding exposure to unfiltered daylight and fluorescent lamps can help to prevent this type of damamge. Temperatures should be kept as low and consistent as possible to avoid changes in relative humidity which can cause condensation. Condensation can cause shrinkage and swelling in the wood that he lacquer is applied to. Consolidation can be used to repair cupping and flaking. Various other ingredients can be mixed in to condition the paint in several ways and modify its various properties and drying. Oil on canvas, oil on board, and oil on metal are only some examples of oil paintings on various surfaces. Oil paintings are susceptible to damage from vandalism, time, improper handling, environmental stressors and temperature changes. They are also susceptible to damage in low relative humid conditions, and fluctuations can create stresses in the paint layers. Excessive light with heat can cause fading to pigments. Proper storage with climate and lighting controls are important especially depending on the support structure. The wooden stretcher behind an oil painting on canvas will expand and contract with moisture causing possible buckling of the canvas and cracking, flaking, or shattering of the paint. Paintings should be stored off the ground in case of flooding. Moisture and water damage can cause mold to develop along with various other issues depending on the materials involved: Cleaning old and yellowing varnish, and revarnish the painting. Pastels that are made of pigment particles bound together with a binding agent, and oil pastels that have pigments mixed with wax and non-drying oil. Pastels that are pigment particles bound together take on a more chalky and loose powdery characterization, and are secured to its supports using fixative or diluted resin in solution. Oil pastels never fully dry, and are sensitive to scrapes, dust and dirt. Framing should be under ultraviolet filtering acrylic sheeting. Excessive light exposure can cause pigment fading and discoloration in the paper. Some damage to works of art on paper is irreversible, but there are some methods of restoration that can be used to treat damages such as structural tension in the paper created by previous restoration treatments. This may include removal of the secondary and adhering a new support or even an internal cardboard support. Due to its thin washes and light colors, watercolor paintings are very light sensitive. Also, due to their exposed support they are vulnerable to damage from dirt, dust, and pollutants. Landscape with Herd of Buffalo on the Upper Missouri. Watercolor by Karl Bodmer Preventive conservation[edit] Damage to Watercolor and Gouache paintings can be prevented and mitigated by maintaining temperature and relative humidity within acceptable ranges, and low light conditions. As with pastel works, watercolor and gouache paintings should be mounted and framed. Damage that may occur are disfiguring brown spots from mold growth, paper turning brown and brittle from cardboard supports, yellow stains from adhesive tapes, and cockling and undulations. Tears and losses can be repaired with products such as wheat starch paste or methyl cellulose, and weakened paper can be strengthened by attaching a lining. Scroll paintings often are multiple layers of paper and silk attached to wooden bars called a stave and dowel. Screens are often single panels that are joined together by paper hinges that fold into each other like an accordion. Japanese Arhat Painting Preventive conservation[edit] Scrolls and Screens are vulnerable to damage from

fluctuations in temperature and humidity. Exposure to light for extended periods of time can cause silk and pigments to fade, and paper to darken. Glazes and films that filter ultraviolet light can help to prevent damage from UV radiation. Screens can become distorted from uneven tension between the back and front side panels. In general some types of conservation treatments that may be conducted on scroll paintings and screens include remounting, consolidation of pignments, removing old backings, and in-painting and retouching. In-painting and retouches should only be done on losses or fills. Preserving the both the paint layer and the support wall is crucial.

Chapter 4 : Museum Conservation Institute Painting Conservation Glossary of Terms

The conservation and restoration of paintings is carried out by professional painting www.nxgvision.comngs cover a wide range of various mediums, materials, and their supports (i.e. the painted surface made from fabric, paper, wood panel, fabricated board, or other).

Contact Us Care and conservation of oil paintings Paintings and their frames are made of many different materials. Together they form a complex structure that is easily damaged if knocked or dropped. The materials are also sensitive to, and can be damaged by, the surrounding environment, particularly extremes and changes in humidity and heat, as well as by light and dirt note 1. How well a painting survives over the years depends on keeping it in a good environment and on sensible handling, storage and display. What can go wrong Paintings can be damaged in many ways. The canvas might be torn or punctured, or may have split at the edges. The painting might have developed sagging canvas, bulges or dents. If on panel rather than canvas, you may see splits, warps and cracks in the wood; the wood will also be susceptible to insect damage e. Even if the underlying material appears sound, you may find that the image itself has areas of cracked, loose or flaking paint, lost paint, or fading. Additionally the frame may be in poor condition which places the painting at risk of physical damage. If you think your painting has a problem or you want to find out more about its condition, contact a paintings conservator. Save any pieces that have fallen off, however small. Keep them safely in a bag or envelope as they can nearly always be put back on. Many of the problems identified above are caused or made worse by poor environmental conditions. Most of the materials in a painting respond to changes in relative humidity and temperature by expanding and contracting. If the relative humidity keeps on changing then the painting will expand and contract repeatedly; the structure will become stressed and begin to fall apart. Paint layers may crack, canvas may split, wood may split and paint flake off. In the home, a painting can suffer quite easily from high and low humidity. Light and dirt can also cause problems. Too much light can fade certain colours and will speed up the darkening of varnish, the more light the faster this happens. Dirt looks unsightly and may be very acid. Acid will speed up the breakdown of canvas and wood making it very brittle and vulnerable to knocks and blows. A conservator can advise on suitable environmental conditions for your collection, and can monitor the environment and make recommendations if adjustments need to be made. What you can do to protect your paintings Moving and handling Tears, holes, scratches and dents are most likely to happen when your painting is off the wall. If you plan ahead when moving paintings, these damages can usually be avoided. For example, plan a move by making sure you have somewhere to put your painting before you move it; ideally when off the wall paintings should rest face out against a clear wall on a padded surface, away from doorways, furniture and passing people. Always make sure your hands are very clean and dry before moving a painting and make sure the painting is securely fitted into the frame. When carrying your painting, have it facing towards your body and use both hands, one to hold the edge and the other to support it from beneath. Paintings with glass or ornate frames can be heavy, assess whether you need two people before embarking on the move. Hanging your painting Think about the positioning of your painting in relation to accidental damage from knocking. Avoid hanging close to shelves, furniture or where people can knock it. Avoid hanging behind doors, or in busy corridors where the painting can get knocked. You should also think about the environmental conditions in which your paintings hang. During the summer in Britain, the conditions in a well ventilated room are, in general, fairly good for paintings. However, in the winter months, extremes of temperature or relative humidity can cause problems, for example, the central heating in homes really dries out the air and causes problems; whilst rooms that suffer from damp will have high humidity and dampness encourages mould or mildew. The following points are worth considering when hanging your paintings if you want to take steps to ensure the best possible environmental conditions. Try to avoid hanging over direct heat or moisture sources, for example, right over fires, radiators, heaters, hot water or central heating pipes; in bathrooms, kitchens or around swimming pools. Avoid hanging over or next to outdoor vents, or on damp walls. Avoid hanging in rooms that are well heated in the winter paintings on wood are the most vulnerable. Picture lights attached to or near to the top of a painting can get hot and lead to localised

heating. It is best to take advice on lighting. Bear in mind that paintings will build up dirt more quickly in rooms with an open fire or where people smoke. Think about the security of your painting, and take the following steps to ensure that it is hung safely. Hanging fitments should be fixed to the sides of the frame, not the top. Choose a thick and solid part of the frame. Make sure screws are secure but do not push them through the front. Use good quality picture wire or medium gauge fishing line, run it double and trim off extra lengths. Attach alarms to backs of frames or backboards, not the back of the canvas or panel. Conservators can provide advice on methods of lighting that will not cause localised heating; they may also be able to advise on security fittings. Housekeeping As with all objects in your home a painting will collect dust and dirt. Dust can be removed using a very soft brush with metal elements protected so that they cannot be a cause of damage. Avoid feather dusters, sheep skin dusters, however soft, as they catch. You must be careful to check that there is no paint flaking before dusting. Do not attempt any dusting if the surface appears unstable. If your painting has glass this will need cleaning from time to time. Always spray glass cleaner onto the cloth, not the glass. Spray well away from your painting. The use of backboards is recommended as a preventive conservation measure to protect against the accumulation of dust and dirt, as well as against knocks and accidental damage. A conservator can fit backboards to your paintings for you. Do not attempt any repair or cleaning yourself. This is a skilled process and should only be carried out by a fully qualified conservator. Consulting a conservator There is much that you as an owner can do in terms of preventive conservation which will slow the deterioration of your painting and protect it from accidental damage. However there are many occasions, particularly those involving interventive treatments, in which the services of a trained paintings conservator are invaluable. Paintings conservators can provide a wide range of services, for example, they can: Assess the condition of your painting s and provide recommendations for the management of a collection. Assess the environmental conditions in which paintings are hung. Provide advice on the lighting and hanging of paintings. Carry out condition reports in preparation for the loan or exhibition of paintings. Provide advice on preparing paintings for transport. Carry out technical analysis to inform historical research or conservation treatments. Carry out treatments such as cleaning and consolidation. Most local art galleries or museums will provide information about the history of your painting. They may also have regular sessions where you talk to both curators and conservators. Should you wish to obtain a valuation of your painting, these can normally be obtained from a reputable auction house. Note 1 This guidance note does not cover miniatures, paintings on glass, vellum, ivory, parchment, single sheet paper or silk, or those works described as works of art on paper such as watercolours, prints, drawings or photographs. Use the Conservation Register to Find a conservator. This article offers general guidance and is not intended to be a substitute for the professional advice of an accredited conservator. The views expressed are those of the author or authors, and do not necessarily represent the views of the Institute of Conservation. The Institute of Conservation would like to acknowledge the support of The Royal Commission for the Exhibition of in the production of this guidance information. Further information on The Royal Commission for the Exhibition of and its work is available at www.

Chapter 5 : Art conservation and restoration - Paintings | www.nxgvision.com

Conservation of Easel Paintings will be of use in the training of conservation students and will provide generations of practicing paintings conservators and interested art historians, curators, directors, collectors, dealers, artists, and students of art and art history with valuable information.

Paintings Broadly speaking, most paintings can be divided into 1 easel paintings, on either canvas or a solid support, usually wood; 2 wall, or mural, paintings; and 3 paintings on paper and ivory. The correct choice of conditions of display and storage is, therefore, of the first importance. Ideally, each type of painting requires its own special conditions for maximum safety, depending on the original technique and materials used to compose it. Portable paintings on canvas or panel are called easel paintings. Basically, they consist of the support the canvas or panel ; the ground, ordinarily a white or tinted pigment or inert substance mixed with either glue or oil; the paint itself, which is composed of pigments held in a binding medium such as drying oil , glue, egg, casein, or acrylic; and, finally, the surface coating, usually a varnish, to protect the paint and modify its appearance aesthetically. These four layers have many variants but must be constantly borne in mind when considering the problems of conservation. Paintings on wood Wood has been used as a support since the encaustic paintings of ancient Greece. Wood-panel supports were used almost universally in European art in devotional icons and other works before the 16th century, when the use of canvas became dominant. Wood has the disadvantage of swelling and shrinking across the grain when there are variations in the relative humidity of the atmosphere. In northern temperate climates, variations in humidity can be considerable. In England, for example, the seasonal variation in a museum that is centrally heated in the winter can be from 25 percent in midwinter to 90 percent in summer. In both Europe and the United States, the combination of an unsuitable environment of low or changing relative humidity with the restraining effect of the paint layer often produces a permanent bowing of the panel, which is convex at the front surface. To counteract both the shrinkage and the bowing especially the latter , restorers in the past placed wooden strips called battens , or more complex structures called cradles, across the back of the panel as constraints. This solution, however, often produced internal stresses that led to severe distortion of the front surface, cracking of the panel along the wood grain, and in some instances extensive damage to the paint. This form of intervention has been largely abandoned in favour of an environmental approach that places the emphasis on the maintenance of a stable environment that fosters preservation. The ideal conservation solution is a form of air conditioning in which the relative humidity is maintained as much as possible at what is generally agreed to be the most reasonable levelâ€”i. It is normal by modern standards to accept as inevitable some permanent convex curvature. When warping and cracking have already occurred or when the latter seems likely as a result of the mistaken application of secondary supports, such as cross battens, expert restoration treatment is required. In principle, this consists of removing the cross battens and applying a reinforcement to the back that imposes a uniform but gentle constraint over the whole surface. An entirely new support, of either panel or canvas, was then adhered to the back, and the temporary facing was removed. This treatment is very rarely done today and is generally considered to be an extreme form of intervention. Paintings on canvas Painting on canvas became common in the 16th century, as aforementioned, and has been used largely in European and American painting traditions. A canvas support expands and contracts with variations in relative humidity, but the effect is not as drastic as with wood. Canvas, however, will deteriorate with age and acidic conditions and may be easily torn. The most frequently used technique until the midth century consisted of ironing a new canvas to the old, using an adhesive composed of a warm mixture of animal glue and a farinaceous paste, sometimes with the addition of a small proportion of plasticizer. This method, though less common today, is still used, especially in Italy and France. Another method, introduced after the midth century, uses a thermoplastic wax-resin mixture. They are covered with a membrane, enabling the air between the two canvases to be evacuated with a pump through holes at the corners of the table; adhesion then occurs on cooling. In addition, during this process, wax penetration can darken canvas and thin or porous paint layers. Formulations containing synthetic resins, including polyvinyl acetate and, increasingly, an ethylene-vinyl

acetate copolymer, are applied in solution or dispersion to the surfaces and, after drying, are adhered on the hot table. Ethylene-vinyl acetate copolymer adhesives are also available as dry, nonpenetrating films. More recently, cold-setting polymer dispersions in water have been introduced by using a low-pressure suction table, from which the water is removed through spaced perforations in the table surface with a powerful downdraft of air. Pressure-sensitive adhesives have also been introduced as lining adhesives but have not been widely adopted. Although all these methods are currently in use, the trend has been to move away from lining and wholesale treatments in general in favour of more refined, precise, and limited treatments that address condition problems in a more specific way. The more elaborate versions of this instrument are equipped with heating elements and humidification systems beneath the perforated table surface. These features make it possible to apply controlled humidity, heat, and gentle pressure to perform a variety of treatments, including tear realignment and repair, reduction of planar deformations, and the introduction of consolidating adhesives to reattach cleaving paint. This treatment is often used in conjunction with local or overall treatments executed by using the suction table and suction plate. In the past, paintings have occasionally been transferred from wood to canvas by a variant of the treatments described above. The reverse of thisâ€”i. Occasionally, the ground may lose its adhesion to either the support or the paint layers, or the ground may fracture internally, resulting in cleavage and paint loss. The paint layers themselves are subject to a number of maladies as a result of natural decay, faulty original technique, unsuitable conditions, ill treatment, and improper earlier restorations. It must be remembered that, whereas housepaint usually has to be renewed every few years, the paint of easel paintings is required to survive indefinitely and may be already years old. The most prevalent defect is cleavage. If the loss is not total, the paint can be secured, according to circumstances, with a dilute protein adhesive such as gelatin or sturgeon glue, a synthetic polymer, or a wax adhesive. The paint is usually coaxed into place with an electrically heated spatula or a micro hot-air tool. As painting materials became more readily available in commercial preparations in the 18th and 19th centuries, systematic methods of painting that were once passed from master to apprentice were replaced by greater individual experimentation, which in some cases led to faulty technique. These defects cannot be cured and can be visually ameliorated only by judicious retouching. A notable defect arising from aging is the fading or changing of the original pigments by excessive light. Although this is more evident with thin-layer paintings, such as watercolours, it is also visible in oil paintings. Copper resinate, a transparent green much used from the 15th to the 18th century, became a deep chocolate brown after prolonged exposure to light. After the discovery of synthetic dyestuffs in , a further series of pigments were created, some of which were later discovered to fade rapidly. Unfortunately, it is impossible to restore the original colour, and in this case conservation, in its true sense of arresting decay, is important; i. Ultraviolet light, the most damaging kind of light, which comes from daylight and fluorescent fixtures, can and must be filtered out in order to avoid damage. Almost every painting of any degree of antiquity will have losses and damages, and a painting of earlier than the 19th century in perfect condition will usually be an object of special interest. Before a more conscientious approach to restoration became general in the midth century, areas of paintings that had a number of small losses were oftenâ€”indeed, generallyâ€”entirely repainted. It was considered normal in any case to repaint not only losses or gravely damaged areas but also a wide area of surrounding original paint, often with materials that would visibly darken or fade with time. Large areas with significant detail missing were often repainted inventively in what was supposed to be the style of the original artist. Some restorers adopt various methods of inpainting in which the surrounding original paint is not imitated completely. The inpainting is done in a colour or with a texture intended to eliminate the shock of seeing a completely lost area without actually deceiving the observer. The aim in inpainting is always to use pigments and mediums that do not change with time and might be easily removed in any future treatment. Various stable, modern resins are employed in place of oil paint to ease reversibility and to avoid discoloration. Minute details of texture, brushstrokes, and craquelure must also be simulated. A variety of natural resins, sometimes mixed with drying oil or other constituents , have been used to varnish paintings. Although the traditional use of varnish was partly to protect the paint from accidental damage and abrasion, its main purpose was aesthetic: Mastic and damar , the most commonly used natural resins, are subject to deterioration. Their chief limitations are that they become brittle, yellow,

and less soluble with age. In most cases a discoloured varnish may be safely removed by using organic solvent mixtures or other cleaning agents, but the process is very delicate and may cause significant physical and aesthetic harm to the painting when it is done improperly. Some paintings exhibit a greater sensitivity to cleaning than others, and some varnishes may be unusually intractable owing to their formulation. In addition, many organic solvents are known to leach components of the medium from oil paint. For these reasons, cleaning should be carried out only by an experienced professional, and the frequency of the procedure should be kept to an absolute minimum. When the varnish is in good condition but covered with grime, the conservator may, after close inspection, clean the surface with aqueous solutions of nonionic detergents or mild solvents. Choice of solvent mixture and mode of application has always depended on the skill and experience of the conservator, but modern scientific theory has clarified the procedures. Synthetic resins have been widely adopted for use as picture varnishes. They are chosen for chemical stability with regard to light and atmosphere so that they can eventually be removed by safe solvents and will not rapidly discolour or physically deteriorate. Acrylic copolymers and polycyclohexanones have been the most commonly used since the s. The synthetic varnish resins may be broadly divided into two classes of high-molecular-weight and low-molecular-weight resins. The high-molecular-weight resins are judged by many conservators to lack the desirable aesthetic and handling characteristics that are found in natural resins. Low-molecular-weight resins approach the appearance and behaviour of natural resins more closely and are currently receiving more attention. Recently introduced varnishes based on hydrogenated hydrocarbon styrene and methyl styrene resin hold promise as substitutes for natural resins. Paintings that are varnished, contrary to the intention of the artist, can become permanently altered in appearance over time and become diminished in value. In the last quarter of the 19th century, certain artists, most notably the Impressionists and Post-Impressionists , began to eschew the use of varnish. Wall paintings Wall paintings are the oldest known form of painting, dating back to the prehistoric paintings in the Altamira cave in Spain and the Lascaux Grotto in France. Wall paintings are integral to architecture, in both a material and aesthetic sense. The conservation of wall paintings inevitably concerns not only the paintings themselves but also the larger context of adjacent building materials, building maintenance, use, and preservation. From the point of view of conservation, different types of wall paintings have features in common, though the techniques of restoration required for each can differ greatly in detail. Pigments are permanently bound to the plaster as a result of a chemical change, as the fresh lime becomes calcium carbonate upon drying. The stability of these paintings depends upon the presence of a binding mediumâ€”such as egg, oil, gum, or glueâ€”mixed with the pigments to adhere them adequately to the wall surface. This type of painting is found in the wall paintings of ancient Egypt. In marouflage, a more modern variety of wall painting, paintings on canvas are mounted to the wall using an adhesive. Chief among the hazards to all these types of wall paintings is excessive moisture. Damp may rise through the walls, originating at the level of ground contact and spreading upward. These avenues of intervention are, however, often prohibitively expensive due to the complex engineering they require. If these approaches are not possible, amelioration of the problems may be achieved by reconfiguring drainage at the exterior of the building, and thereby reducing the overall quantity of available moisture. Damp may also come from the outside wall, where direct infiltration of rainwater may penetrate through the substrate to the face of the painting, evaporating at the paint surface. In this instance, localized building repairs or efforts to shield the exterior wall may attenuate the problem. Moisture may also result from condensation on a cold mural surface, a phenomenon common in churches, tombs, or buildings that are heated only intermittently or that are subject to excess ambient moisture generated by the respiration of crowds of visitors. Lastly, water damage caused by leaking roofs, clogged drainpipes, and faulty plumbing is easily stopped by repairing these systems. Conscientious maintenance is the best preventative treatment. Damages to wall paintings due to moisture may include blanching, drip staining, and delamination of paint layers due to efflorescence.

Chapter 6 : Paintings Conservation Lab | Smithsonian American Art Museum

Working with the conservation community we undertook research in conservation issues of acrylic paints and paintings, desiring a formal understanding of something most acrylic painters might take for granted: That if an acrylic painting gets dirty, it can simply be washed off with a damp rag. Just.

Painting Conservation, Step by Step Some people call conservators the "magicians" of the art world Oftentimes, the colors of older paintings have a brown and yellow tint caused by an organic varnish that has yellowed with the passage of time. Such tints can become so opaque that no true color or depth of background is visible, making the actual painting seem to have almost disappeared. When this happens to a painting, a restoration, conducted by a trained conservator, should be considered. They are actually trained art historians, chemists and materials scientists, and they combine these areas of knowledge with the manual dexterity and color sense of a skilled artist. To follow is a description of the painting restoration process that highlights the details a conservator must examine and the types of information he or she should be knowledgeable of when restoring a work of art. The Restoration Process Upon receiving a work that needs restoring, a conservator should examine the work, making note of the signature to identify the artist. Trained as an art historian, a conservator should be aware of the style of that period, the painting technique, and the materials available to an artist of that time. This knowledge will help the conservator identify the pigments and fabrics that were popular and available to the artist and help him or her determine the best approach for the restoration. This helps a conservator see the true color scheme. A conservator will often continue examining a painting with the aid of an ultraviolet light, noting a greenish or blueish fluorescence on the surface of the painting. Trained in chemistry, the professional conservator knows that resinous, organic varnish, like Damar or Shellac, creates such colored luminosity when subjected to incident light or other electromagnetic radiations of shorter wavelength, especially violet and ultraviolet light. If a layer of varnish is discovered, a conservator will perform a small cleaning test to remove it. Using a solvent on a cotton swab, a conservator gently rubs open a window, displaying the true color beneath. This will help the color palette used by the artist become apparent. The whites are white, the blues are blue. And so it continues as each pigment reacts to the solventsâ€”â€” different solvents in different strengths with different rates of evaporation. A conservator continues this complicated process, examining with a magnifying glass and a microscope, using different lights, making notes and taking photographs at each stage to carefully document every part of the restoration. An oil painting is composed of multiple layers of pigments suspended in medium oil and turpentine. Regardless of its subject, a painting is simply a created illusion, striving to depict three-dimensional reality on a two-dimensional surface. All of pictorial art history is simply a studied investigation of ways to create depth, air and space. And, as with any illusion, these methods are extraordinarily fragile and subtle. It is with these that the artist claims virtuoso skill. No pigment is removed or abraded. This delicate work progresses slowly and incrementally, stroke by stroke, each viewed under a magnifying lens. As the old layers of varnish and dirt are removed, the painting slowly begins to appear. This is not magic but a meticulous chemical process performed by a trained and steady hand accompanied by a highly educated and experienced eye. There is no margin for error since any loss of pigment is irrevocable. Slowly, the work continues until all the varnish is removed. The three-dimensional illusion not only remains intact but comes alive. Any material used to repair or strengthen the canvas must be both chemically compatible and reversible: Finally, a conservator will remove residual adhesive and restretch the painting onto a new museum-quality stretcher. Once this is complete, the conservator is ready to repaint. The conservator, with the hand of a trained artist, brushes a synthetic, nonyellowing, removable varnish over the face of the painting. Dry pigments are used in synthetic, nonyellowing medium, and paint is used in areas of color loss, using exactly the same colors, texture and surface sheen of the surrounding areas. Once this "in painting" is finished, a conservator will brush on one final coat of protective varnish. When these steps are complete, the painting has been restored. It is no longer fragile. All materials used in the restoration are noninvasive and can easily be removed without endangering paint layers or affecting the work in any way. The painting can be enjoyed for years to come. Art Care Tips As

an advocate for preservation, a conservator should inform clients of techniques for preventing damage to their art. Here are a few basic guidelines: Paintings should be framed with new and secure hardware and hanging materials. A nonacidic backing board should be attached to the reverse of the stretcher to protect the painting against puncture. A painting should be hung on an appropriate wall in a stable environmentâ€”never over a fireplace or air duct, and not on an exterior wall or in direct sunlight. A painting should be examined periodically by a professional to ensure its continued beauty and its preservation against the ravages of time. He or she is an advocate for the preservation of a cultural property. A database of conservators who are affiliated with the American Institute of Conservation AIC and other similar professional associations is available on www.

Chapter 7 : Conservation of paintings (video) | Khan Academy

Conservation The primary responsibility of the conservation division is to preserve and study works of art in the Gallery's collection. The division houses specialized departments for the treatment and care of paintings, works on paper, objects, photographs, textiles, and frames.

A paint loss caused by excess friction during improper varnish removal or a varnish loss caused by friction. A family of synthetic resins made by polymerizing esters of acrylic acids. A synthetic resin which is the condensation product of a polybasic acid such as phthalic, a polyhydric alcohol such as glycerin and an oil fatty acid. An Italian phrase meaning painted solely wet in wet and usually, but not necessarily, at a single sitting. It is used most commonly with reference to oil painting. The nonvolatile portion of a coating vehicle which is the film-forming ingredient used to bind the pigment particles together. A term applied to lacquer when they become partially opaque, cloudy or transparent upon application or drying. Fast-evaporating solvents may cool the film enough to cause water condensation, precipitating solid materials. Blending is most commonly used with reference to academic painting to mean the blending together of separate touches of color for half tones until the graduations of tone and the marks of the brush are imperceptible. Usually refers to the broad application of masses of light, shade, and color, in the early stages of a painting. It helped to obliterated rapidly the glaring bright of the ground. A bluish fluorescent coat which forms on the surface of some films. Common term for the degree of viscosity of a paint or varnish, as "a lot of body" or "not much body. The presence of a loose powder on the surface of a paint after exposure to the elements. The use of graduation of light and dark to describe forms in drawing and painting. A generic term referring exclusively to all colors of the spectrum, including white and black. Color is described by three properties: A pattern of cracks that develops on the surface of a painting as a result of the natural drying and aging of the paint film. The tendency of a liquid to draw up and bead on the surface. Fine lines or minute surface cracks occurring on painted surfaces due to unequal contraction in drying or cooling. Removal of color on abrasion or rubbing. Any catalytic material which when added to a drying oil accelerates drying or hardening of the film. Oils which have the property of forming a solid, elastic surface when exposed to air in thin layers. The drying oils most commonly used in oil painting were linseed oil, walnut oil and poppy oil. Examples of non-drying oil unsuitable for painting are olive oil and almond oil. A phenomena whereby a whitish crust of fine crystals forms on a painted surface. These are usually sodium salts which diffuse through the paint film from the substrate. Egg either whole, yolk or white can be used as a pigment binder. Tempera painting was very popular until the late fifteenth century. A suspension of fine particles or globules of a liquid within a liquid. Historically, enamel has described decorative and protective glassy coatings on metal as well as glassy, decorative coatings on glass. Enamel has also implied certain organic coating such as paints or lacquers. A pigment which contributes very little hiding to the system, but does reinforce the film and alter the gloss. The bodily waste discharged by flies. Fresh specks can be cleaned off with moistened cotton swabs; however, aged specks can not be cleaned off at all. Traditionally a lean layer of size and chalk to form a ground on which to paint. It is used in egg tempera painting and as a coating material. Traditionally used to add color to forms modeled in monochrome opaque paint. Aged glaze is very sensitive to solvents. The shine, sheen or luster of the surface of a coating. Most common are angles of 20, 60 and 85 degrees. Dirt can be in the varnish, on top of the paint layer, or on top of the varnish. A layer of opaque paint applied to a support to provide a suitable color and texture on which to draw or paint. It usually results from faulty solvent balance or incompatibility of ingredients. The texture created in a paint surface by the movement of the brush. Impasto usually implies thick, heavy brushwork, but the term also refers to the crisp, delicate textures found in smoother paint surfaces. Paint applied over losses only. This is a technique commonly used by conservators to unify a painting that has suffered paint loss. A term which usually indicates that the material dries by evaporation and forms a film from the nonvolatile constituents. A colored natural or synthetic dye absorbed onto a semi-transparent base and used as a pigment. When solvents are applied to a paint film, solvent soluble compounds are removed and the film becomes more brittle. Lean oil color is paint in which the oil or fat

content has been reduced, usually by indirect means such as diluting the paint with turpentine. Brightness, reflectance, value Position on the grey scale between pure black and pure white. The most popular drying oil used as paint medium. The medium hardens over several weeks as components of the oil polymerize to form an insoluble matrix. Driers can be added to accelerate this process. A painting is said to be loaded when it is painted thickly, often with a heavy impasto. A loaded brush is one charged to its full capacity with paint. The gloss of a finish. The component of paint in which the pigment is dispersed. Organic surfaces exposed to high temperature-humidity atmospheres are attacked by fungus growth. This dark discoloration, usually a mold type of fungus but more commonly called "mildew. A film defect associated with spraying. Appears as circular imperfections. Tree resins mastic and dammar , fossil resins copal and amber , and insect resin secretions shellac. A general term from a water-insoluble viscous liquid oleoresinous: Indicating a material which has been made by the combination of an oil and a resin. Hiding power or the degree of obliteration. Impervious to light or not translucent. A pebbled film surface similar to the skin of an orange in appearance. It is caused by too rapid drying before leveling takes place. This paint was not applied by the artist but applied at a later date. It not only covers the original paint, but its presence often indicates an excessive alteration of the image. Over painting is not an acceptable conservation technique. The paint layer is the actual layer or layers of color more-or-less opaque applied by the artist in the execution of the painting. Derived from the Italian meaning "repentance. These alterations are often visible in the infra-red, to x-rays and sometimes to the naked eye. A finely divided, insoluble substance which imparts color to the material to which it is added. Solvents such as alcohols, ketones, etc. These have high dielectric constants. A large molecule formed when many molecules are linked together by polymerization. An organic polymer in the form of a crystalline or amorphous solid, or viscous liquid, of wither natural or synthetic origins. The work done by a restorer to replace areas of loss or damage in a painting. The tendency of a wet paint film to flow downward and become thicker on vertical surfaces. Purity or intensity of color. Degree of freedom from grayness. Very thin layer of opaque or semi-opaque paint that partially hides the underlayer. The difference in appearance between colors of similar hue. A specular reflectance taken at a low angle, usually 85 degrees. The absorption of paint medium by a lean underlayer to produce a matte or dead surface. An adhesive diluted in water. Usually means and animal glue consisting of collagen and gelatin, rabbit skin glue, parchment glue, and edible jelly are all forms of gelatin. A rigid wooden frame over which a canvas is usually stretched. The stretcher can be expanded by tapping keys wedges inserted at the corners. A stretcher from with fixed corners. It cannot be expanded. Complex, substantially amorphous organic semi-solid or solid materials built up by chemical reaction of simple molecules. The outside edges of a stretched canvas through which tacks are inserted attaching it onto the stretcher. Usually refers to egg either whole, yolk, or white used as the medium but can also refer to glue size.

Chapter 8 : Conservation and restoration of paintings - Wikipedia

The Paintings Department appreciates the importance of being a custodian of art and strives to do its part to preserve paintings by using the least invasive treatments possible for each piece.

Paintings Paintings are fragile creations that require special care to ensure their continued preservation. Paintings consist of various layers. Traditional paintings are finished with a coat of varnish. Contemporary paintings, naive, or folk art may not have a ground layer or varnish coating. Paintings that do not have all of the traditional layers may be more fragile and susceptible to change or damage. Download Flyer The paint layers can be made of pigments in oil, acrylic or other synthetics , encaustic wax , tempera egg , distemper glue , casein milk , gouache plant gum , or a mixture of media. The paint can be applied on a wide variety of supports. Paintings on canvas are usually stretched over an auxiliary wood support. An adjustable support is called a stretcher; a support with fixed corners is called a strainer. Paintings change over time. Some inevitable results of aging, such as increased transparency of oil paint or the appearance of certain types of cracks, do not threaten the stability of a painting and may not always be considered damage. However, when structural damages or unstable conditions occur in a painting such as tears, flaking paint, cracks with lifting edges, or mold, consult a conservator to decide on possible courses of treatment for your painting. Suitable Environment It is important to maintain a proper environment for your paintings. The structural components of a painting expand and contract in different ways as the surrounding temperature and humidity fluctuate. For example, the flexible canvas may become slack or taut in a changing environment, while the more brittle paint may crack, curl, or loosen its attachment to the underlying layers. Paintings generally do well in environmental conditions that are comfortable for people, with relative humidity levels between 40 and 60 percent. Environmental guidelines have been developed for different types of materials. Paintings on canvas may react more quickly to rising and falling humidity levels than paintings on wood panels, but the dimensional changes that can occur in a wood panel can result in more structural damage. Owners of panel paintings should be particularly conscientious about avoiding unusually low or high relative humidity and temperatures to prevent warping, splitting, or breaking of the wood. Museums strive to maintain constant temperature and humidity levels for works of art, but even with expensive environmental control systems this task can be difficult. In most cases, gradual seasonal changes and small fluctuations are less harmful than large or rapid environmental fluctuations. Avoiding large fluctuations is very important. One of the simplest and most important preservation steps you can take is to have a protective backing board attached to paintings. A Fome-Cor or archival cardboard backing secured to the reverse of a painting with screws not staples or tacks will reduce exposure of the canvas to rapid environmental changes, keep out dust and foreign objects, and protect against damage during handling. Be sure that the backing board covers the entire back of the picture; do not leave air vent holes, which can create localized environmental conditions and lead to cracks in paint. The backing board should be attached to the reverse of the stretcher or strainer, not to the frame. Have a conservator or reputable framer attach it for you. Displaying Paintings The display of paintings requires careful consideration. Direct sunlight can cause fading of certain pigments, yellowing of varnish, and excessive heating of the paint surface. If paintings are placed on uninsulated exterior walls, it may help to place small rubber spacers on the back of the frame to increase air circulation. Although a fireplace is often a focal spot for a room, a painting displayed above a mantel will be exposed to soot, heat, and environmental extremes. Hanging paintings above heating and air conditioning vents or in bathrooms with tubs or showers is also inadvisable because the rapid environmental fluctuations will be harmful. Select a safe place away from high traffic areas, moveable seating, or other hazards. When lighting paintings, use indirect lighting. Lights that attach to the top of the frame and hang over the picture can be dangerous. These lights cast a harsh glare, illuminate and heat the painting unevenly, and can fall into the artwork causing burns or tears. Indirect sunlight, recessed lighting, or ceiling-mounted spotlights are best for home installations. Handling Procedures Pictures are usually safest when hanging on a wall, provided that they are well framed, with the picture and hanging hardware adequately secured. If you must store a painting, avoid basements, garages, and attics. A good storage method is to place

the paintings in a closet with a stiff board cardboard or Fome-Cor protecting the image side of each artwork and a backing board attached to the reverse. Do not risk damaging your paintings by moving or touching them any more than is absolutely necessary If you must remove a painting from the wall or move it to another room, clear the pathway of furniture and obstructions and prepare a location to receive it. The frame must be stable and secure; if it is old or there is glazing glass , ensure that it can withstand being moved. If the frame is massive or the picture is wider than your shoulders, ask someone to help you. If the painting is of a manageable size, lift the frame with both hands by placing one hand in the center of each side. Always carry it with the image side facing you. Remove jewelry, tie clips, belt buckles, or other clothing that might scrape the surface. Hang paintings from picture hooks not plain nails placed securely in the wall; a heavy picture requires two hooks. Before hanging, examine the back of the painting to ensure that the hanging hardware is strong and secure. If the painting is framed, the hardware should be attached to the back of the frame, not to the stretcher or strainer. These types of hangers are secured to the wooden frame with two to four screws. Hanging can be more complicated with contemporary paintings that do not have protective frames. Moving and hanging unframed or large paintings safely may require the services of professional art handlers. Framing If you intend to buy a new frame for a painting or have a painting treated by a conservator, take the opportunity to have it framed properly. Ideally, a painting should be held in the frame with mending plates that are attached to the frame with screws. Brass mending plates can be bent and adjusted so there is light pressure on the back of the stretcher or strainer. Although nails are often used to frame paintings, nails are not recommended because they can rust, fall out, or protrude through the canvas. Ask the framer or conservator to pad the rabbet, the part of the frame that touches the face of the painting, with felt or another suitable material to protect the edges of the image. Housekeeping Guidelines After carefully examining your paintings for loose or flaking paint, dust them every four to six months. Feather dusters can scratch or snag on paintings. Never try to clean a painting yourself or use any liquid or commercial cleaners on a painted surface. Commercial preparations can cause irreparable damage to the fragile layers of a painting. Avoid touching the surface of paintings with your fingers. The natural oils in your skin can also cause damage or leave marks that may appear later. Avoid using pesticides, foggers, air fresheners, or furniture sprays near artworks. Remove paintings from a room before plastering, painting, or steam-cleaning carpets or wallpaper. Return the artworks only when the walls and floors are completely dry. When to consult a conservator If your painting requires special intervention, you should contact a paintings conservator. They will give you advice about the safest means by which to conserve and restore your special items. AIC does not assume responsibility or liability.

Chapter 9 : Art conservation and restoration | www.nxgvision.com

Over painting is not an acceptable conservation technique. paint layer: The paint layer is the actual layer or layers of color more-or-less opaque applied by the artist in the execution of the painting.

That if an acrylic painting gets dirty, it can simply be washed off with a damp rag. Just to be clear, we are not currently recommending this practice. Just Paint 5 took a look at conservation cleaning methods currently recommended for acrylic paint surfaces. These remain quite conservative and appropriate for conservators. We have tried to examine more aggressive cleaning techniques that might be practiced by artists and to simply characterize the sort of changes that might occur. Our results showed that under certain conditions and with certain pigments, washing did not show any visible damage. Future research will investigate more precise conditions, the level of changes that may occur in certain colors or mediums and if, in fact, washing may improve the surface by removing surfactants from the paint surface. Historical Review To secure their rightful position in the historical pantheon of art materials, acrylics must undergo the rigor of research and academic study to ensure our understanding of how to protect and conserve acrylic paintings. Acrylic still remains one of the most durable resin systems available for artists. Now that acrylic paintings have achieved a place within the canon of world collections, issues of conservation must be addressed. In some places, very low levels of binder were present to hold the pigments in place, leaving the surfaces susceptible to abrasion. Large areas of these oversize paintings were left unprimed leaving vast expanses of raw canvas, prone to yellowing and embrittlement. This delicate construction made the paintings susceptible to changes in appearance with age, prone to attracting dirt and dust, and difficult to clean safely. Information regarding acrylic conservation techniques was minimal and artists generally assumed acrylic to be simply indestructible. Conservators were undoubtedly dealing with the issues of conserving acrylic paintings much earlier, but because it was so new, very few in the field were able to come forth and publish results. The problems surround two central issues: The sensitivity to water and solvents has raised questions surrounding cleaning, repairing and varnish removal from the acrylic. The thermoplastic qualities, meaning the general softening of the acrylic in high temperatures and the hardening of the acrylic below 45 degrees F have made storage and moving of acrylic paintings challenging. Even at room temperature, acrylic paintings can remain tacky, causing dirt and airborne pollutants to become bound to the dried acrylic film. In addition, acrylic film remains quite porous, enabling the retention of dirt and any solvents that may come into contact with the surface. Conservators have recommended a few approaches to cleaning acrylic paintings, namely: These are very limited solutions given the considerable importance of acrylic paintings in recent art history. In , several articles appeared in the popular press which dismissed all modern materials, including acrylic artist paints. They were written for impact and sensationalism, with little attention to detail or substance. They simply perpetuated myths surrounding acrylic paints and all modern materials. In fact, some very positive information about the materials provided by scientists in the field was purposely left out of the articles. A systematic and learned response to these assertions has been discussed, promised, and advocated through several conferences in which Golden Artist Colors has participated but few projects have been undertaken thus far. Thomas Learner of the Tate Galleries in London. These studies looked at the effects of temperature and relative humidity on acrylics, changes in solubility of acrylics over cycles of both natural and accelerated aging exposure, and finally, the movement of additives through acrylic films. For years, acrylics have been conserved using some of the same methods developed over the last years for oil paints. Golden Artist Colors recognized an opportunity to contribute significantly to the advancement of understanding about acrylics. If acrylics were to be dealt with on their own terms, two things needed to happen. First a review had to be compiled that considered all the critical studies of acrylic paints. This included information from the conservation field and the paint and coatings field in general. We could then offer opportunities for additional studies which we hoped would lead to real options for the conservation community working on acrylic paintings. But more particularly, we felt confident we could develop some best practices for artists working in acrylic. Developing the Tests Our comprehensive review of the field included existing data on raw acrylic polymers, the

polymerization process, additives and paint formulation, and properties of drying and dried acrylic films. It allowed us to come to some very interesting hypotheses to test. So, beginning in January , we started pulling together the testing protocol for short term and long term testing with the intent of either developing with some possible approaches for acrylic conservation or at a minimum simply characterizing the changes that happen in the acrylic paint during aging, cleaning or conservation. We knew that we would at least be able to start to quantify the changes that occur when artists or conservators begin to clean acrylic paintings. The hypothesis that followed from our review was: As we and others have shown that water soluble additives from the paint are exuding to the surface of the painting, we can improve the properties of the acrylic film if we remove these materials. Although seemingly a very easy idea to test, we are, after well over a year, still at the beginning of this research because of the many variables that need to be controlled. The first thing we needed to accomplish was to begin to understand the basis for the differences and commonalities in these materials. It is probably obvious to most artists that all acrylics are not alike. Acrylic artist paints are made up of a range of different raw acrylic binders. These different acrylics may contain different building blocks monomers used to create these large polymers. These building blocks may be used in different ratios, creating significantly harder or softer polymers, or possibly altering the lightfastness of the resulting polymer. The process for building these polymers will also alter the characteristics of the resulting acrylic. Some acrylics are smaller, some much larger, with related differences in characteristics such as gloss and adhesion. And finally just in the raw acrylic itself, there are many different constituents that are used to begin the polymerization process, as well as the addition of other additives. These materials are necessary to change the flow and leveling characteristics of the acrylic, its compatibility with different surfaces, and to add specific attributes, such as advanced adhesion onto leather or plastic substrates. The type of monomer, the method, and the additives required for polymerization all affect the properties of the final polymer and, thus, the paint. Some are hazier than others, some are more yellow. They have different properties and viscosities and accept pigments and other additives in different ways. The paint formulator must accommodate for these differences. Pigments, the second most important additive, are dispersed into the polymer and have their own sensitivity to water, as well as to other ingredients in the paint formula and other solvents. They also affect the dried paint film through their volume, concentration and their size and shape. The volatile additives those that evaporate contribute essential qualities to the formulation and drying process and, for the most part, leave the paint during drying, though residual amounts may still be present in the dried film. These include the coalescing agents, ammonia and freeze-thaw agents. Their presence in the dried film may affect conservation and will need to be addressed in future research. Finally, the dried film is extremely varied depending upon the application method, the substrate on which the work was painted, as well as all the other variables mentioned above. Bubbles, pinholes, craters, pigments sitting up on the surface, underbound paints all serve to create an incredibly diverse paint film. At the least, even the most perfectly applied film will contain pores or microvoids. In fact, the porosity of acrylics is acknowledged as positive in some applications for allowing water vapor to pass through the paint film, reducing the risk of delamination. The porosity of the acrylic also provides for the exceptional mechanical adhesion of acrylic paint layers to one another. Of course, a porous paint film in artwork has many implications for painters and conservators. A porous coating may trap air pollution, dirt and foreign matter, encouraging biological growth. This porous film may trap conservation cleaning agents via capillary action, leaving highly concentrated pockets of solvent that can interact with the painting film on a long-term basis, potentially causing weakening of the film Considering these variables, we mapped out an approach to begin short term studies to characterize the paint surfaces resulting from altering the conditions of drying, the cleaning process and the substrates utilized. We also embarked on the longer term study to look at the changes which may occur when we remove additives from the surface and how this might effect the aging, mechanical properties, dirt pickup, and visual characterization including color and gloss changes in the paint film. Current Research Our current research focused on investigating the role of surfactants. Surfactants are added to the raw polymer to initiate polymerization and they are added to the paint formula to help disperse pigments into the polymer, ease coalescence and help the paint wet-out the substrate upon application. A series of studies in the coatings industry and two of our own studies suggest that surfactants are present at the surface of the dried

paint film, rather than or in addition to being locked away within the film. The housepaint industry acknowledges that surfactants will be washed away by the rain when the paint is young and that this is desirable because it will reduce dirt pickup and staining and will even-out the surface gloss. We have chosen to look at the observable effects of washing on the acrylic film under natural and accelerated aging conditions. In our attempt to look at practical solutions we looked at cleaning acrylic painted surfaces with a percent woven cotton cloth. We used weights to duplicate the pressure that might be used by an adult hand washing off a dusty surface. We used both warm and cold water as well as solvents including ethyl alcohol and mineral spirits. The ethyl alcohol created significant changes in the acrylic film in each test. It clearly smoothed out the acrylic and created traction lines throughout the film. The most surprising results however, were that 20 passes with cold or hot water over the surface, as well as the mineral spirit solvent showed no observable change under magnification. We did detect changes in gloss in the films, with most tests showing an increase in gloss. This would have been expected based on one of two possibilities; we are burnishing the surfaces, or we are removing some of the water miscible additives that find their way to the surface of the acrylic. We did detect under magnification some very random scratches, spaced very far apart. These scratches were on the order of microns in width. They occurred no more frequently then the scratches under tests where we dry rubbed the acrylic surfaces with the cotton cloth. The other significant finding was that certain colors under the water washing left a visible residue of pigment on the wet cloth, specifically the raw umber samples. Our next step, using the same paint films, was to create conditions that caused an observable change with water. In one series we maintained the same amount of pressure, with 80 passes of the cotton cloth. In another series of tests we doubled the amount of pressure with 40 additional passes. Under these conditions we were able to see changes in the sample with the additional weight. These changes included burnishing of the surface and surface scratches. We were also able to detect water spotting in some of the samples. We have repeated the washing of these surfaces to continue to look at changes over time and with repeated washing. Of special note is that by the third washing, no residue of pigment was noticeable on the cotton cloth when washing the raw umber. We also saw that the warm water created a significant increase in gloss in the raw umber sample compared to the cold water. Finally, the mineral spirits created a significant burnishing of the surface in both the test with additional passes and those with additional weight. Our next series of tests looked at the effects of water on the acrylic film. Even a short exposure of just a few seconds will visibly alter the surface of the acrylic.