

aiaVT



The aiaVT newsletter is published by AIA Vermont,
the Vermont Chapter of the
American Institute of Architects.

Executive Director: Hanne Williams, Hon. AIAVT
aiavt@madrivervt.com

1662 Mill Brook Road
Fayston, Vermont 05673
p 802.496.3761
f 802.496.3294

grassroots conference 2007- federal legislation sought for energy efficiency

john b. mcleod, aia, leed ap

Delegations from 300 AIA chapters ascended Capitol Hill in early February to press for passage of Federal legislation that would support energy efficiency in Federal and commercial buildings. The Hill visits were part of the annual AIA conference known as 'Grassroots', where chapter representatives from across the country meet in Washington to tackle legislative goals and leadership issues. Among the 800 delegates attending the conference and calling on their Congressional representatives were AIA VT officers Michael Hoffman, Immediate Past President; Guy Teshmacher, President Elect; John McLeod, Secretary/Treasurer; and Hanne Williams, Executive Director.

This year, the AIA chose three issues to address in the Congressional visits, all related to sustainability. First, Congress should use its authority over Federal buildings to show the way for the private sector in reducing the energy consumption footprint of the built environment. The AIA is seeking legislation that immediately requires all Federal buildings constructed or significantly renovated to consume no more than one-half the fossil fuel-generated energy consumed by a similar federal building in 2003. Beginning in 2010, this 50% cap would increase progressively until all new federal buildings are zero energy buildings by 2030. Second, Congress should extend, or make permanent, the current tax deduction for energy efficient commercial buildings, which is set to expire at the end of 2008. The deduction is applied at the time of occupancy; therefore, many of the buildings coming online since the legislation took effect in 2005 were designed prior to the incentive, and buildings designed today would not benefit from the deduction without an extension of the legislation. The AIA also seeks an increase in the deduction amount, from \$1.80 to

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Architectural Record/ in the Cause of Architecture
JANUARY 1922

“Principles of Architectural Polychromy” Leon V. Solon

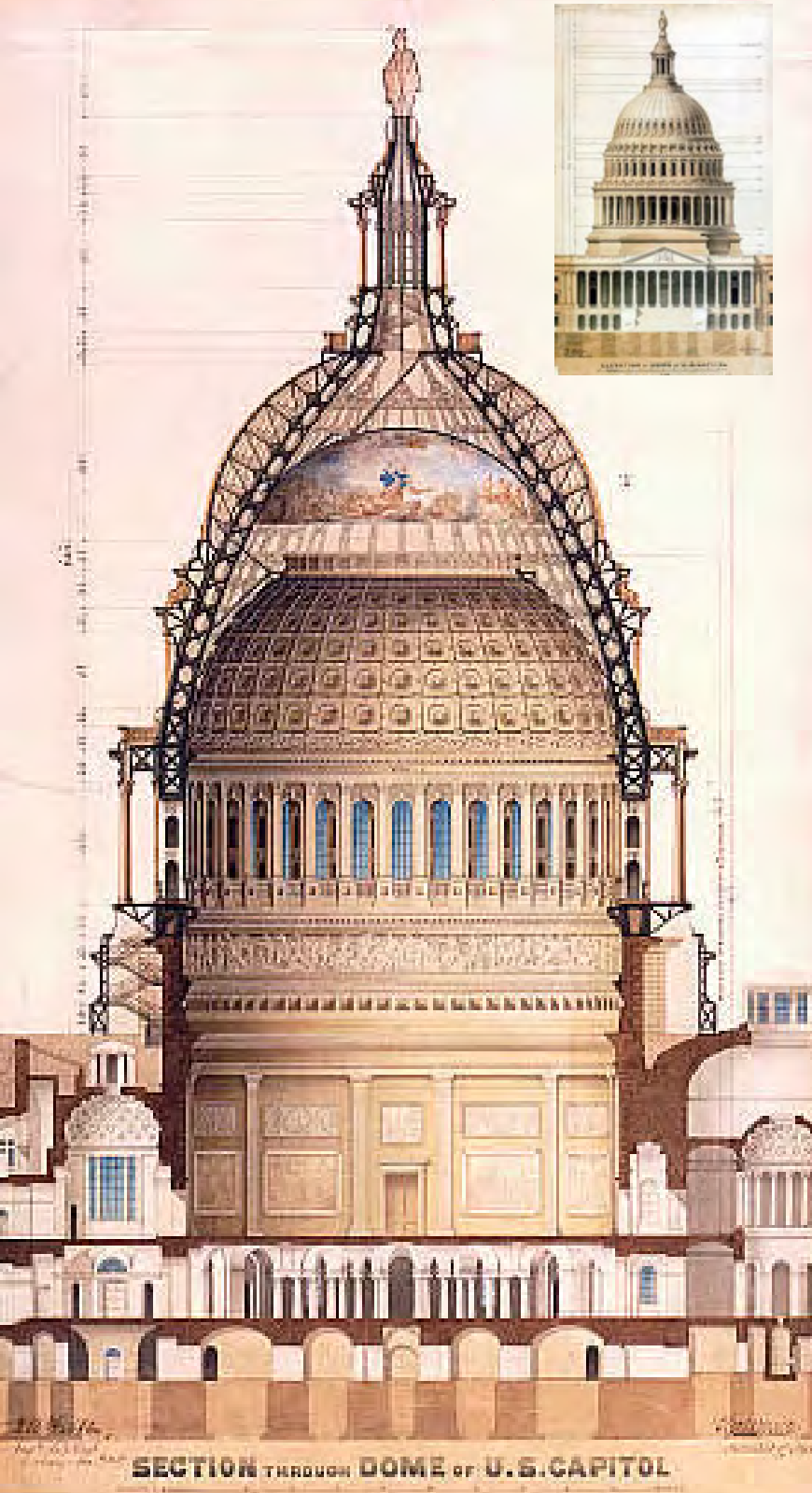
<http://archrecord.construction.com/inTheCause/onTheState/0402Solon-1.asp>

PART I: The Conditions which Control the Introduction of Color

The element of confusion which accompanies an inexperienced attempt to introduce color in a façade arises in most cases from ignorance of the physical properties of color, and their relation to and reaction upon the architectonic values established in design. The major difficulties presenting themselves in practice may be arranged in two main groups. The first concerns the selection of those architectural items to which the application of color may advantageously be made. The second includes the formulation of a color technique; this, besides dealing with the planning of colors upon ornamental form, and with the conformation of contour and relief for the reception of color, involves an answer to the question whether architectural polychromy should include tone gradation or be confined to uniform tones.

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2.07:1



\$2.25 per square foot. Third, the AIA supports amending the Clean Water Act to tighten controls on stormwater sources of water pollution. Federal funds distributed under the Act should be geared toward green infrastructure, such as green roofs, permeable pavement, park lands, swales, and buffer areas.

AIA VT's officers discussed these issues with staff in the offices of Patrick Leahy, Bernie Sanders, and Peter Welch, and had a good conversation with Bernie himself. AIA VT also raised additional concerns particular to Vermont, namely, better funding for school construction, and termination of non-funded mandates from the federal government. Legislative aides requested AIA input on two bills introduced recently, and asked for additional information on certain issues. AIA VT will continue the productive discussions begun on the Hill, and will persist in building the relationship between our profession and the Federal and state governments.

As noted by many Congressional offices during Grassroots, the annual visits from the AIA are unusual in that they never come around, as most 'asks' do, to an underlying request based in self-interest. Rather, the AIA seeks Congressional support in serving the good of our communities, the public, and the planet.

The intention which actuates the use of color in the various arts, to realize aesthetic objectives, functions in two general directions. In the pictorial arts, color stimulates imaginative processes; in the applied arts, the endowment of substance or surface with a species of scenic-value or sense-appeal is the factor determining the methods of application and the quality of color. For the painter it is the most pliable means with which the complexities of effect may be reconstituted, in such guise that his temperament records, on contemplation of his finished work, a reaction equivalent to that experienced during the initial phases of inspiration. The function of color in architecture is of a less involved character; it contributes an extraneous form of beauty to that which is purely architectural; the gratification of the aesthetic sense is visual rather than intellectual, the use of color being free from the intent to stimulate reflex processes.

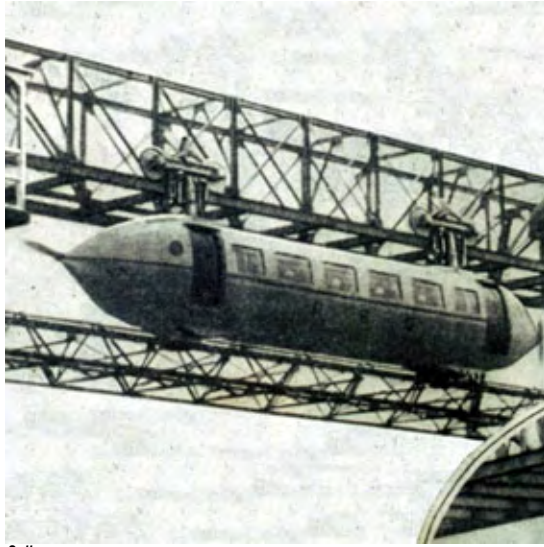
Color in its architectural relation must naturally be classified as a decorative resource. Each decorative resource has the capacity to realize a distinctive type of effect unattainable by the legitimate use of any other decorative means. Our initial steps in research are thus prescribed. It is first necessary to identify those forms of effect which are expressive of the decorative function of polychromy in architectural effect: this can only be effected through an acquaintance with the action and reaction of color upon

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2.07:2

a fire in ver-mountain

joseph cincotta, aia



Sellers-
Monorail Colombian Exposition 1891
This image was used to inspire a proposed
monorail between Winooski and Burlington.

There are times in the practice of Architecture in which each of us comes to feel that we are terribly alone. So much of what we do seems to be a lopsided affair in which we push a number of large heavy balls uphill. Moreover, It is rare and encouraging to see examples of success measured in terms other than money and notoriety. Maybe that is why meetings like Design in Vermont ... Does it Matter," matter.

A wonderful thing happened on a cold Tuesday night in the Burlington City Hall. A fiery meeting took place when five accomplished Designers ignited intense discussion after revealing what makes them tick. AIA Vermont sponsored these professional leaders to address the rather provocative question "Design in VermontDoes it matter?" If standing room only in the capacious Contois Auditorium is any indicator the answer was emphatically: "YES!" In addition to the usual suspects of Architects & Acolytes (think:"designer groupies"), we were honored by the attendance of Mayor Bob Kiss and members of the city's zoning and planning departments. But on an even more astonishing note there was a fair representation of "plain folk" who in some cases were plainly upset by the status quo.

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architectural values and properties. It is, then, necessary to formulate a technique which will serve as the mechanism for effect.

The prime capability of color in architecture is, that it is the most potent of all vehicles for emphasis. Color possesses an inherent property recognized in its scientific aspect as its radiant energy. This form of energy is capable of a control which enables it to attain results of an esthetic character; the phenomena which characterize it produce direct optical results in their decorative operation; but these results react indirectly upon certain vital properties in architectural design unless subjected to rigid regulation. It is necessary, therefore, to discover the nature and location of those reactions upon elements of architectural design which must not suffer depreciation through the presence of color, in order that the results proceeding from the use of color may be uniformly advantageous.

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2.07:3

“The zoning needs to be changed - too many buildings of brick with green trim makes a boring city to look at. There are many different people here, and the new buildings don’t show that.”



Kirsten Van Aalst

Why is it surprising that people came from all walks on a lonely weekday evening to hear if Design Matters? Because the conventional wisdom is that the “Walmarted” world does not care; that a combination of numbing and dumbing down has taken its toll; that the vinyl sided, pseudo-histrionic (sic) world of pre packaged environments has won out and that plain folk can’t discern the difference between the pre packaged world and the real thing, well, apparently NOT! ...at least, not in these Green Mountains.

Vermont has historically followed its own drummer. From being the reluctant 14th state to ratify the Constitution to assiduously and suspiciously avoiding the latest trends trumpeted from the big cities. In Vermont there has always been a preference to boil off the sap, to reduce things down to their essence. It’s no accident that we have successfully avoided more of the “plastic strip development” than our neighbors. It’s not that we are free of the big boxes but Vermont seems to have held on to more of its local heritage than the rest of the country where we all too often see an alarming devolution towards homogeneity.

A major objective is sought, in all architectural design, to which each contributory element of effect is instinctively subordinated: it consists in the creation of an aspect of harmonious adjustment between the component structural forces, in order that a sense of statical force may predominate; by statical force is meant that impression of equilibrium resulting from a perfect coordination of the varied forces sensed in an architectural composition. If strong emphasis, in the guise of color, is added to a façade in which the effect of these varied forces conveys an impression of satisfactory adjustment, it is obviously imperative that color location and its decorative development must have a clearly recognized relation to values previously established. Since emphasis constitutes a focus of effect, the inclusion of a predominant element such as polychromy, capable of imparting the maximum degree of accentuation to any member, must not occur as an unrelated and superadded artistic activity.

The visual impression resulting from the presence of color upon any architectural member is antithetical to its appearance of structural strength: this latter quality is diminished relatively to the degree of color elaboration. However, it does not follow that the presence of color in a façade is consequently antagonistic to this vital element in architectural design. On the contrary, color may accentuate the extremes of certain aesthetic qualities present in a work of art. It may contribute by contrast to the sense of statical force in the main conception, by augmenting the impression of lightness in members that are secondary or supported, thereby intensifying the structural integrity of those architectural items which are essentially sustaining.

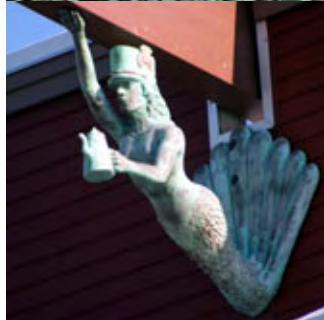
The decorative capacities of color in architecture may be grouped under three main activities:

1. Its inherent chromatic energy, which introduces a quality of decorative emphasis in any item upon which it figures.
2. Its decorative contribution to architectural effect, by the introduction of a decorative interest distinct from the purely architectonic.
3. Its influence upon structural attributes, by accentuating qualities of delicacy and elegance in architectural members in which those elements are characteristic.

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2.07:4



Wisniewski

This was one of those rare nights where you felt proud to be an Architect. In the fight to promote any form of design integrity A public event of this type deserves to be recorded. The media tends to pander to the exhibitionist, often mistaking brazen attention-getting for true showmanship. At this event we saw another side. It was inspirational to come out of our own worlds, to hear that we are not alone and that a lot of other people really do care. As moderator and conceiver of the whole evening, Architect John Anderson, AIA encouraged us, "I hope that after tonight you will walk away with some new vocabulary to talk about how design matters." Each of the presenters used their allotted "ten minutes of fame" to demonstrate how design matters from their own unique perspectives.

Kirsten van Aalst, Architect, Architecture Program Director, Norwich University School of Architecture, presented a rapid fire series of provocatively captioned slides that underlined her considerable success at Norwich as a most effective instructor. Her passion was how to stimulate observation, "It's not just what you see, its choosing what you see." Kirsten is clearly inspired by noted author and Professor Carlina Rinaldi who is directing some very creative thinking on visual learning coming out of the Italian province of Reggio Emilia:

<http://www.news.harvard.edu/gazette/2001/12.13/10-projectzero.html>

Closer to home she showed a young student questioning the visual monotony resulting from Burlington's well intentioned zoning regulations; "out of the mouths of children...." A point was made that zoning tends to neuter citizen involvement with a false security, that the regulations will insure a good outcome. She cautioned that zoning can't take care of design and a bureaucracy, even a good one, is not equipped to consider it. In the face of banality Kirsten counseled vigilance and the audience heard her loudly and clearly. Several people agreed with an audience member's comment that they were made to feel inadequately schooled to criticize architecture. The resentment came to the surface when this person declared that "Lay people instinctively know what fits."

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The Use of Color in Historic Types

The historic types of architecture developed between archaic eras and modern times may be roughly classed as those wherein racial instincts achieved a spontaneous expression and those, dating from the sixteenth century in Europe, which are in the majority of cases classic derivatives. In many of the former, color figures prominently on façades, as an important factor in their creators' content of beauty; in the latter, it is almost entirely absent. In races and ages where an uninfluenced form of expression was possible, the sensuous appeal of color was a valuable medium for imparting to the minds of the masses those impressions and influences which constituted so important a function in the social message conveyed through architectural design. During the later period, with the revival of the classic type of design, another set of esthetic ideals controlled imaginative effort. In the Renaissance of Italy, the basic interest discovered in the classic models was that of organized proportions, which did not exist in the Byzantine, Romanesque or Gothic. We must also remember that, with the inception of

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2.07:5



JHodgson

Michael Wisniewski, Architect, of Duncan-Wisniewski Architecture in Burlington, brought us to 16th Century Japan with sumptuous tea house slides and a wonderful story of a tea house master who curiously blocked a magnificent ocean view with hedges and structure, that is until the visitor sat down for tea and beheld a breathtaking view out of a low window created just for the purpose. This was followed by a series of beautiful images that underlined his passion for: Avoiding the obvious, Making connections, Providing wonderful surprises and finally, affirming Louis Kahn's dictum that "God is in the Details." This explains why he was inspired to turn a dumpster shed into a gem of a pavilion that doubled as a bus stop. It explains why he would place a mermaid at the top of a building or turn a gable vent into a visual pearl.

Jeff Hodgson, Landscape Architect, of H. Keith Wagner Partnership in Burlington zoomed his focus out a bit further into the Landscape setting. He revealed his passion to transform everything from an ordinary storm sewer to an alleyway into environmental art. The results enrich all our lives as we see when a formerly unused alley renews itself as a thriving center of human activity based around open chess tables.

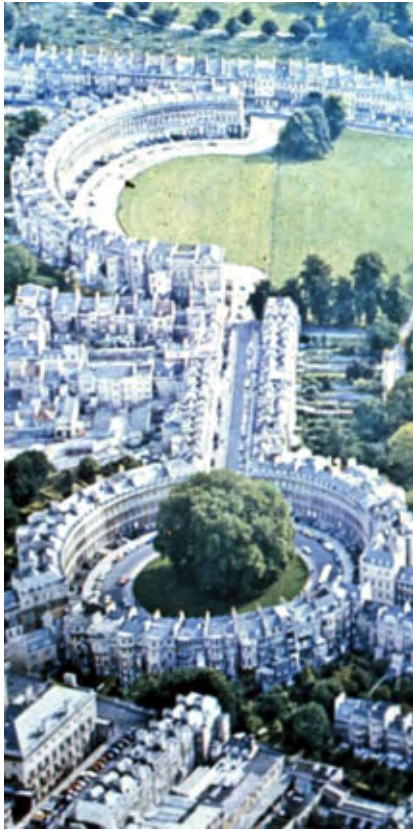
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this style, there was a revision of values in the media of effect, and that masses and detail were subject to a changed angle of consideration; as in painting, so also in architecture, the qualities of light and shade striven for were radically different from those sought by stylistic predecessors. Leonardo da Vinci introduced the most revolutionary intimation in pictorial effect by demonstrating that the composition of groups and the focus of interest in details could be effected by chiaro-oscuro. It can readily be appreciated why, when decorative interest was focussed by delicate transitions and accents of light and shade, so forcibly contrasting a factor as color was omitted, as being a component item of a quality of effect achieved through the medium of another group of aesthetic ideals; in addition to this, there were no longer any traces of color on any of the examples to serve as guides and references to its original presence; the fact that color was thus used, could be gathered only from the value statements of a few classic authors—data in all probability ignored by the pioneers of the movement. This argument applies also to the later derivations of the eighteenth and nineteenth centuries, which accepted the Italian interpretation of the classics, in equal ignorance of the decorative entity of the original types.

Research among ancient systems of polychromy, in order to discover principles upon which to found practice and to develop technique, must be directed by a simple consideration that spares its much fruitless toil. As color action and reaction must be adjusted in a direct relation to architectonic values, the solution to our difficulties can only exist in that stylistic type which most nearly embodies our own esthetic standards and ideals. This basis of selection eliminates all those polychromic types which exert only a cultural interest, such as the Assyrian, Egyptian, Hindu, Mongolian and other oriental and exotic architectural expressions. By this process of elimination we find our hopes centered upon Greek polychromy as practiced during the sixth, fifth and fourth centuries B. C., during which period Greek architecture achieved its most spontaneous and virile expression. The untiring enthusiasm, patience and energy of modern Greek archaeologists have accumulated sufficient authenticated data bearing upon our field of research to test any theories in the light of a series of examples.

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2.07:6



Dave Sellers, Architect, of Sellers and Company Architects in Warren Vermont, went for the big picture. He guided us into large scale examples at an Urban level where design mattered. Indeed what would the city of Bath be without the bold visions of John Wood the Elder and his son to carry them out for the Bath Circus and Crescent. In a jibe at the “green—washing” trends, Dave declared, “If a building lasts 2000 years it is sustainable.” He recounted the apocryphal tale of Luis Kahn in which he asked three masons working on the same project what they were doing. The first replied that he was, “laying bricks.” the second stated that he was building a wall. The third declared he was building a cathedral: Intention makes all the difference. Dave suggested that citizens should consider a bill of rights that might include a “livable city.” Projects might be judged with a score card for issues such as pedestrian access, “projects with a 75% or less need not apply”

In the end it is the built environment which is the single most distinguishing legacy of past cultures we study. There is good reason to care about Design. Each of these presenters is to be commended for sharing their souls and carrying the torch for Design that matters. A little more hope is a good thing.

The most forcible impression received from an initial grouping of Greek architectural polychrome data, is the appearance of standardization conveyed by a uniformity of method governing the location of color on façades, during these three great centuries. The next impression, resulting from an exhaustive examination of color planning upon ornamental detail, lies in their rigid adherence to certain decorative conventions: Greek conservatism is so consistently apparent for three centuries despite radical changes in architectural types, that fixed procedure by a race so artistically versatile can only be explained by the surmise that they embodied certain basic aesthetic or physical essentials, which could be neither dispensed with nor replaced in practice.

An analysis of the Greek system of color location and composition on the façade reveals the existence of architectural principles and methods evolved through an intuitive knowledge of the action of radiant energy in color when a group of pigments are assembled decoratively, and the direct relation of this energy to specific architectonic properties: it is an art based upon an understanding essentially scientific. In their polychromy the Greeks give us yet another instance of their matchless intuition, displayed wherever natural phenomena direct the creation of artistic effects. Under the guidance of this rare form of intuition, the component elements of artistic impulse undergo an automatic process of mutual adjustment, of an order far superior to any procurable by other means. The uniformity in these methods of artistic procedure was not the result of any control arbitrarily enforced, as is reputed to have been the case with creative effort in Greek sculpture: it rather appears as a moral control arising from a conviction that the methods established in practice were so basically sound, that deviation from them must inevitably lead to error.

In this first and introductory part of our treatise on polychromy, it has been necessary to make several statements which call for explanation and discussion: these will be developed as each section of our subject is examined in fuller detail. It will be found that the Greek polychrome method affords a solution of the major difficulties which beset practice today: it teaches us the principles governing color location, color adjustment in ornamentation, and the manipulation of light as the means of developing color interest in the uniformly applied tone—the only form in which color may be used in architecture, as shall be demonstrated in a future issue.

cont.

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learning by design
spring competition package
...now available!!!

Check out the website link: <http://www.aiavt.org/outreach/lbd/> for further information.

aiaVT welcomes

michael minadeo, *assoc. aia, burlington*
matthew smith, *aia, huntington*
douglas sonsalla, *aia, west fairlee*
andrew wellman, *p.a., west berlin*



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Please send articles, notices, letters, and graphic submissions to:

Andrea Murray, AIA
Bread Loaf Corporation
Architects, Planners and Builders
1293 Route 7 South
Middlebury, Vermont 05753
802-388-9871 ext. 239
amurray@breadloaf.com

AIA Vermont reserves the right to edit articles for available space and determine appropriate content prior to inclusion. Submissions must be received by the 15th of the month prior to publication.

americana international environmental technology trade show and conference- *montreal: march 20-22*

daniel hecht, vermont environmental consortium

I attended this event in 2005 and its West Coast equivalent, Globe, in 2006, representing Vermont's green enterprises with VEC's exhibit. It is an astonishing presentation of new technologies and new ideas, a real education in the art of the possible.

The 400 exhibits at the show include renewable energy systems, pollution remediation technology, green consumer products, new kinds of agricultural equipment, clean air vehicles, biomass processing and conversion technologies, green building design and materials, information management technologies, environmental books/periodicals publishing, and many, many more. It's an eye-opening, mind-boggling display that will inspire you to implement similar innovations here in the U.S.

In addition, there are exhibits featuring sustainable community development services, environmental education, municipal initiatives in sustainability, international environmental preservation programs, urban planning, and similar initiatives from around the world. It's one of the largest events of its kind anywhere, attracting 400 exhibitors, 2,000 international delegates, 10,000 trade show attendees. You can learn more at www.americana.org.

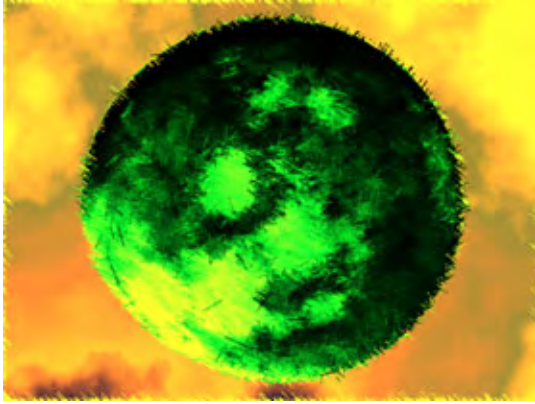
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PART II: Defining the species of Artistic Impulse which should Actuate the Creation of Color effect in Architecture

Color, as a vehicle for effect, has quite another significance or capacity in the mind of the painter than it has, for instance, in the estimation of the textile designer. With the painter, it is essentially a medium for imaginative stimulation; in the purely decorative arts its capacity is directed towards the creation of sense appeal: each of these artistic activities utilizes color for the realization of different ideals. As the dominant ideals of arts are never identical or interchangeable, methods of procedure evolved in the expression of those ideals are inseparably identified with the art in which they originated. This involves an important consideration which must be kept in mind when we review color methods which might serve for our guidance and assist us to determine that precise character of color effect which is appropriate to architecture. The contribution to effect which a decorative practice has the capacity to make to any

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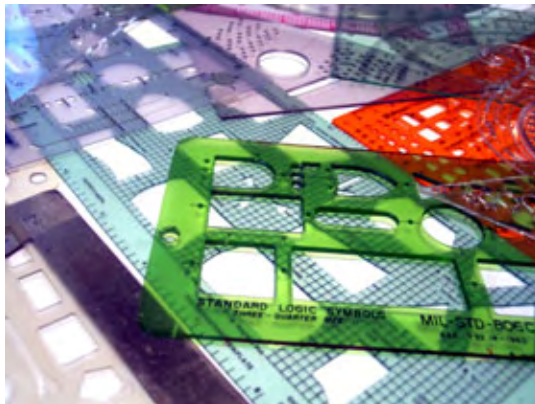
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Vermont Environmental Consortium will be exhibiting, representing Vermont's green enterprise community, with support from the Agency of Commerce. If you'd like to attend, we have about 50 free attendance passes to be given away on a first-come, first-served basis.

If you're looking for international marketing opportunities, we'll be there with the Vermont Global Trade Partnership to help connect Vermont firms with foreign clients, and the U.S. Commercial Service will be hosting one-on-one matchmaking services. Their fees for matchmaking range from \$200 to \$900, but the Vermont Agency of Commerce has kindly offered to pay for part of the cost.

If you'd like to attend, please contact me for a free pass — (802) 485-2455. If you'd like to register for matchmaking, please contact Dana Eidsness at the Global Trade Partnership, (802) 828-1681.



particular art, cannot be paralleled in another art, merely by adopting mental or technical methods of procedure which achieve successful issue in their original association. When an architect wishes to introduce color effect in his design for a building, without acquaintance with the laws which govern its architectural use, his natural inclination will lead him to simulate the painter's sensibility towards color, in order that he may establish scenic value. Considered from that point of view, his design becomes a "subject," upon which color interest must be developed as a separate artistic activity from his initial impulses, which were purely architectonic. Owing to the great dissimilarity which exists between the major aesthetic aspirations identified with pictorial and architectural effect, the realization will soon be forced upon him that progress in the direction of the painter's ideals entails the jeopardy of vital architectonic values.

This untenable position will compel the abandonment of the painter's standpoint when formulating plans for architectural polychromy. The attitude of the decorative artist towards color as a medium for effect would in all probability be studied next by the architect. Here again disappointment awaits him, as he will have another opportunity of appreciating the impossibility of achieving equivalent results in two arts by using identical means; in addition, the decorative artist's vast resources of processes, textures, and materials have no counterpart in architectural usage; manipulation of tone value and quality, which performs so important a part in the creation of decorative effect, is debarred from use for reasons we will give later.

We must not forget that color, independently of its artistic association, possesses an inherent capacity to excite an elementary form of aesthetic consciousness merely by the visual gratification which it excites; in the strictest sense of the term it is a decorative element. Color effect in architecture can obviously rank only as a secondary and subordinate decorative interest; in the pictorial and decorative arts it constitutes a dominant factor. If, when planning color for architectural embellishment, we were

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agency of natural resources sewer grants and loans promote sprawl

A new report released by the Vermont Smart Growth Collaborative indicates that the state Agency of Natural Resources (ANR) is ignoring its own rules and promoting sprawl by awarding sewer grants and loans to service outlying areas.

The 2007 State of Vermont Smart Growth Progress Report evaluates Vermont's progress in putting the state's smart growth policies into action on housing, conservation, transportation, and land use and development regulation. The report examines public investments, programs and regulations from 2003 through 2006.

"We were disappointed that ANR continues to disregard its 2002 Wastewater Funding Rule that targets funding to projects that support smart growth," says Noelle MacKay, Executive Director of the Vermont Forum on Sprawl, which coordinates the Collaborative. "Extending sewer lines for development in farm fields encourages scattered development and means less funding is available for investment in existing facilities, particularly in our downtowns and villages," added MacKay.

cont.

actuated by all artistic impulse which, when operative in another art, causes color effect to become a major value, we should be employing an activity differs essentially from our requirement; because the result we strive to obtain must necessarily be of the minor order. As the effect created with color in architecture must be of a contributory architectonic character, its decorative expression must have as direct a relation to the predominant aesthetic aspirations in architecture, as those which are identified with its use in the fabrication of impressions through painting or decoration. Its decorative significance must be purely architectonic; that is to say, the legitimate use of color is restricted to the investment of certain structural features with an additional form of scenic interest; architectural interest preponderating over color interest.

The Relation of Color Effect to Major Architectonic Properties

In considering the employment of an indeterminate decorative quantity, such as polychromy, in architectural effect, where it will figure as an auxiliary to a closely inter-

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Highlights from the report also show that transportation spending is focused overwhelmingly on highway expansions that lead to sprawl and more global warming pollution from increased traffic. For example, a 2001 executive order requires state agencies and departments to foster the conservation of land around interstate interchanges, and to take specific actions to avoid strip development in these areas. Despite this executive order, state agencies have taken little or no action to prevent this scattered development.

"Vermont's scarce tax dollars should be used wisely. We should invest in the healthy communities we have and not subsidize sprawl," said Sandra Levine, Senior Attorney with the Conservation Law Foundation, a contributor to the report. "State government can take the lead in protecting our clean air and water by doing more to support smart growth."

Senator Ginny Lyons, Chair of the Senate Natural Resources and Energy Committee, praised the report. "State government's investments and actions must match its own smart growth policies," said Lyons. "This report has good ideas the Legislature should consider to put Vermont's agencies on track to support smart growth."

**FEATURED ENERGY-EFFICIENT PROJECT:
STATE OFFICE BUILDING
BENNINGTON, VERMONT**

Photo: Jeff Clarke Photography, Inc.

"All the energy saving measures used in this building survived life cycle cost analysis. What's not to like about lowering overall costs while also reducing environmental impacts?"

*David E. Burley, Director of Engineering
Department of Buildings & General Services,
State of Vermont*

www.encyvermont.com

Efficiency Vermont
your resource for energy savings

cont.

related group of artistic activities, its serviceableness is commensurate to its possible contribution to that content which is known as the "art" or "characteristic" beauty. This supreme quality results from the co-ordination of all integral aesthetic impulses, qualities and properties, which, during the creation of a work of art, have come into contributory being. This highest order of beauty is comprehensive and receptive in character—in a sense antithetical to the contributory nature of its ingredient elements. The characteristic beauty of architecture is that aesthetic content which exists in sublime examples, in which all other qualities are merged and linked together by their common factor of artistic contribution. It is so indefinite and comprehensive through the infinite variety of its component elements that the term "quality" is too specific for its description. This entity of architectonic beauty, evolved by a perfect adjustment of varied creative impulses, is itself void of impulse; it is as a sense that it affects our aesthetic perception. Such a sense affects us in the contemplation of the purest examples; it absorbs and dominates all individual excellences, enduring in contemplation as the ultimate objective of each aim; it might be designated as the sense of beauty in statistical force.* If this may be accepted as the characteristic beauty of Greek architecture, or the super-quality which absorbs all others, we must endeavor to discover whether color use was considered from the contributory angle as being capable of adding to that content when conceived relatively, or of detracting from it when developed independently.

The achievement of beauty in architecture depends in a great measure upon the degree of skill with which elements of effect are co-ordinated through design. Color is the most potent vehicle for emphasis in any form of scenic effect. Emphasis which is misplaced disorganizes the proportions and mutual relationship of previously adjusted aesthetic factors in a work of art, be it in a painting, in music, dancing, prose or poetry. If we introduce into an architectural scheme a decorative element which possesses an active

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The report also makes several recommendations to change state policy to promote smart growth:

- Require that grants or loans for sewer expansions be awarded to projects that support smart growth.
- Adopt a Statewide "fix it first" policy targeting funding to fix and maintain existing roads and bridges.
- Target transportation, state building and housing spending to smart growth areas.
- Sustain funding levels to protect farmland and provide for affordable housing.
- Require State agencies to take action to avoid sprawl development at highway interchanges

To read about other state agencies' progress in promoting smart growth, the 2007 State of Vermont Smart Growth Progress Report is available online at www.vtsmartgrowth.org.

The Vermont Smart Growth Collaborative is a coalition of Vermont housing, business and environmental organizations working together to promote state policies and local practices that encourage smart growth. The Collaborative provides technical assistance to help Vermont communities plan for growth. It is also active in efforts to create a state growth centers program, address big box store proposals and explore alternatives to the Circumferential Highway.

capacity for emphasis, such as color, its presence alone accentuates the scenic importance of any member or item upon which it figures, thus altering the ratio of effect value which was allotted to that item in the original architectural conception. It is obvious, therefore, that the location and decorative development of color must be in a direct relation, and in complete subordination, to that adjustment of architectonic values which is the basis of excellence in architecture.

To test this theory it is necessary to ascertain whether there is any evidence in the highly organized architectural system of the Greeks, proving that they considered the addition of color capable of influencing architectonic values established in design. Polychromy was universally used in architectural effect by the Greeks. Insofar as the general location of color is concerned, they established a uniformity approaching standardization which characterizes their surviving examples. We must observe whether they avoided the application of color emphasis to items performing certain structural functions; also, whether essential and characteristic structural properties of specific architectural items were not enhanced when color effect was restricted to items of a reverse character. In other words, if the presence of color detracts from the apparent strength of essentially supporting members, their function might be emphasized should the apparent weight of the items they support seem less through color treatment.

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The Relations Established by the Greeks Between Color Effect and Structural Values in Architectural Composition

The architectural members of an exterior design may be separated into two main groups according to their structural significance: those which perform the function of weight-carrying, and those which are supported or are purely decorative in character. This method of analysis was adopted in the examination of those Greek structures of which the original polychromy has been reconstructed from data by archaeologists of unequivocal repute. The examples chiefly used were Curtius' and Adler's reconstructions of the temple of Zeus, the Treasury of Gela and the Heraion, at Olympia; those of Wiegand for the temples of the Akropolis and those Furtwangler at Aegina. Many other works were consulted; but as many of those previous to the Olympia excavations, about 1887 have their gaps in data bravely filled with fanciful designing (which subsequent investigation and comparison have proven inaccurate) they were useless as data for the reconstruction of polychrome methods. Their utility was restricted to actual facts recorded relative to treatment of detail, which was of corroborative value. This criticism applies to the works of Hittorf and the restoration of the temple of Empedocles made under the auspices of the Ecole des Beaux Arts. The key to the Greek polychrome system was discovered at Olympia, where the wealth of data recovered and the rigid adherence of the archaeologists to facts, enabled their successors to proceed upon secure ground.

Following the classification outlined above, the weight-sustaining group will include such items as column shafts and bases, the retaining walls, and the architrave; while the second group will comprise the cornice, all moldings and string-courses, the pediments and their sculptures, caps and abaci, anthemions, gargoyles, decorative roof tiles, and other such items. A valuable observation will at once be recorded; no color figures on any of the architectural items in the weight-sustaining group, whereas all those of the second group bear color in varying degrees.

As the degree of elaboration corresponded, on similar items of the different buildings examined, there was obviously some reason for this uniformity. In order to ascertain whether the degree of color development was regulated by architectonic considerations, all colored items were next grouped in order, according to the extent to which color featured upon them, beginning with the polychrome designs of five, four or three colors and ending with color bands and lines. The result brought forth a striking proof of the extent to which the Greeks subordinated color effect to structural properties in architectural effect. The items of this last group, which were arranged according to color treatment, were found to be in the order of their relative structural significance. The greatest degree of elaboration characterized the treatment of those features which were essentially decorative, such as the anthemions, gargoyles and moldings, a simpler

treatment was employed for applied architectural members such as the triglyphs and string-courses, a single color invariably decorating the former; on the echinus of the Doric cap, and at the top of the shaft, color lines alone were used. The degree of color elaboration decreased from five color combinations to single lines, as the structural significance of the items decorated increased.

By obvious deductions drawn from these observations, the following rule was formulated to guide color location in architectural polychromy: The presence of color upon any sustaining item of an exterior elevation tends to depreciate its appearance of structural strength. By confining its location to those items which are supported, are applied to surfaces, or are essentially decorative in character, color contributes to vital structural attributes by apparently reducing the impression of weight in those features. Color design must be adjusted in such a fashion that its elaboration increases as the structural significance of the items decorated decreases.

This rule should be applicable to the polychrome treatment of buildings designed after any of the structurally organized types of stylistic treatment. Any detriment to architectonic values ensuing from the introduction of color is inconceivable if its location and decorative development be regulated in accordance with what we believe was the Greek principle. It disposes arbitrarily of the initial and most perplexing problem—that of color location. As the architect plans the development of color effect upon a building, debatable points arise as to the advisability of polychromy upon certain features; also, as to the relative degree of color embellishment which he may permit himself on those features selected for adornment; such considerations are all met by the polychrome rule. The undertaking then resolves itself into a question of the individual's capacity to create effect with design. Examples of systematized polychromy in modern work are practically non-existent. The archaeological works bearing upon the subject are few in number, difficult to procure, and available only in certain of the greater libraries. They are written in various languages, and few readers have the good fortune to be masters of them all. Examples which typify principles are not of themselves illuminating and are of little service for guidance in dissimilar problems if the principles they demonstrate are unformulated. The recognition of basic principles which guide the direction of effort, is the best insurance against squandering energy to ultimate error.

*During the periods of greatest virility in Greek architecture, the existence of static forces in physics was a subject of philosophical speculation. In the third century B. C. it was reduced to scientific form by Archimedes. It is not suggested that the great builders of Greece accepted a philosophic principle as a goal towards which inspiration was be directed, but merely makes record that this preeminent quality which reveals itself in their structures had a contemporary scientific equivalent.