CLASSROOM TESTING OF MODEL SECONDARY LEVEL HISTORIC PRESERVATION BASED LESSON PLANS

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We would also like to the thank the New York City Board of Education and the High School of Arts and Business, Corona, New York (Principal Stephen Drakes, Assistant Principal, Leslie Rubenstein, teachers: Lynda Aron, Bryan Serra, Kevin Lawlor, David Moyal, Kieran McGuire and the fifty five volunteer students); Council members Ken Fisher and John Sabini; Alex Herrera of the Landmarks Conservancy; Sharon Vatsky of the Queens Museum of Art; and host artisan sponsor, A. Ottavino Corporation.

Without their support and enthusiasm the Classroom Testing of Model Secondary Level Historic Preservation Based Lesson Plans at the Historic Preservation Workshop would not have been possible.

Cover Picture:
Matt Mullican's World Fair Buildings granite relief with students doing rubbings
(1964 Unisphere in background)

Report on Classroom Testing of Model Secondary Level Historic Preservation Based Lesson Plans to the NCPTT

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II. Introduction

The Historic Preservation Workshop project, sponsored by the National Center for Preservation Technology and Training, falls within the multi-year Preservation Arts High School Project of the Center for Architecture and Building Science Research at New Jersey Institute of Technology (NJIT Center) and the New York City Board of Education (Board of Education). Other major participants are the World Monuments Fund (WMF), City Council Member Ken Fisher's Office, the National Center for Preservation Technology and Training (NCPTT), the National Trust for Historic Preservation as well as many leading preservation organizations throughout the country.

The concept for a Preservation Arts High School is an outgrowth of the 1993 symposium sponsored by the WMF that identified the need to develop a model program for sustainable urban preservation. (Appendix 1,a) The participants at the symposium found that there has been a steady erosion of our historic fabric and the record of humanistic achievement and values embodied therein, as well as a parallel loss of the craft skills that created that legacy. Thus to preserve the record of its history and culture, society must generate a new corps of trained craftspeople imbued with a holistic understanding of this heritage. With this need in mind, New York City Council Member Ken Fisher envisioned the establishment of a high school dedicated to preservation training that would significantly benefit many New York inner city youth and help them meet the needs of society as well.

The threefold goal for the development of a Preservation Arts High School is:

- to create an holistic high school curriculum that integrates an interdisciplinary historic preservation-based curriculum with an artisan skills training curriculum and internship model that will meet the mandatory requirements of the New York State Board of Regents
- to qualify students for admission to post secondary programs
- to provide them with the equivalent of a one-year preservation arts internship

The curriculum is intended to enable students who graduate from the program to enter the workforce with an excellent academic background and earning potential, and the option to go on to post secondary education. Now completing its second year as a pilot program based at the High School for Arts and Business in Corona, Queens, the High School for the Preservation Arts project is seeking to develop a complete interdisciplinary core curriculum that integrates the studies of architecture and historic preservation into the History, English, Science, Mathematics, and Art curricula as well as artisan skills development.

A. High School for the Preservation Arts Program Development

The NJIT Center assumed the challenge of developing a Preservation Arts High School and has developed model preservation-based secondary curriculum and associated craft internships with the Board of Education, which is a full partner in the program. The Board of Education has designated schools in the system to participate in several pilot projects, two of which have been sponsored by the NCPTT, and funding teacher development. The curriculum the NJIT Center and the Board of Education is constructing allows students to experience history as a living dynamic by focusing on specific historic structures or artifacts and studying the forces of their creation, interpretation, and preservation. This new curriculum approach uses interdisciplinary preservation-based learning designed to help students understand how different disciplines can be integrated into their workplace activities. Through this model, students explore a combination of aesthetic, philosophical, social, economic, political, and technical elements that serve as a vehicle for the appreciation of all aspects of the society being studied.

B. Classroom Testing of Model Secondary Level Historic Preservation Based Lesson Plans at Historic Preservation Workshop: Overview

The NJIT Center and the Board of Education's High School for Arts and Business held a Historic Preservation Workshop on Saturday, October 2, 1999 that was sponsored by the NCPTT. Four teachers from the High School of Arts and Business taught fifty-five volunteer students, (Appendix 4,b) from grades nine through twelve, four preservation-based lessons per grade level each using the theme of the Worlds Fairs. These lessons were taught at the Queens Museum of Art, the former New York City Building that was used in both the 1939 and 1964 Worlds Fairs in Flushing Meadows Park, New York. (Appendix 4,c) HS Arts & Business Principal, Stephen Drakes and Assistant Principal, Leslie Rubenstein fully participated in the planning of the event as well as on the day of the event. Their involvement and the excellent work of the four teachers and students from the pilot high school, are what made this project possible.

Three of the four high school teachers Lynda Aron (English), Bryan Serra (Art) and Kieran McGuire (Science) have participated in the Preservation Arts High School Project over the past two years as part of the 1998 Preservation Week, the 1998 Preservation Portfolio Internship Program for Teacher Development, and this year's World's Fair Historic Preservation Workshop, the subject of this report. The Social Studies teacher for the Historic Preservation Workshop, David Moyal, replaced the original Social Studies teacher, Kevin Lawlor who participated in Preservation Week and the Preservation Portfolio Internship Program but moved to a new high school and was unable to continue. Ms. Aron also participated in the Teacher Development Program during the summer PPIP 1999.

Preparation for the Historic Preservation Workshop began in summer 1998 when the four teachers, sponsored by the Board of Education, spent 80 hours each throughout the

summer with the NJIT Center for Teacher Development. The 1998 Teacher Development Program included visiting the Preservation Portfolio Internship Program site, Stanford White's Prospect Park Peristyle, with host artisan, A. Ottavino Corp. included two summer interns from the high school working on site. In addition, the teachers went on field trips with NJIT Center director and staff and the student interns as they developed lesson plans based on the turn of the 20th Century Peristyle. They infused their lessons from first hand experiences throughout the summer and these experiences allowed the teachers to better understand the preservation model and process for enhancing their lesson plans.

III. Background

The NJIT Center and the Board of Education have been working together since 1996 to develop a unique preservation based curriculum and internship model for a proposed High School for the Preservation Arts in New York City. From the beginning, the World Monuments Fund (WMF), Council Member Fisher and the National Center for Preservation Technology and Training were supporters and catalysts to make the idea a reality. The concept was first introduced by Council member Ken Fisher at the1993 WMF symposium: *Employment Strategies for the Restoration Arts: Craft Training in the Service of Historic Preservation.* (Appendix 1,a) Since then, the project has been involved in numerous studies, has developed and tested model curriculum, and has conducted three pilot summer Preservation Portfolio Internship Programs (PPIP).

The concept for a Preservation Arts High School was approved by the New York City Board of Education in 1997 by Board President William Thompson, Deputy Chancellor Judy Rizzo and Chief Executive for Schools Programs and Support Services, Dr. Peg Harrington.

The project was then launched in the summer of 1997 with a Preservation Portfolio Internship Program (PPIP) sponsored by the Times Square bid followed in 1998 by the spring academic Preservation Week Program, sponsored by the NCPTT, the 1998 and 1999 summer PPIP's, the Fall 1999 NCPTT sponsored Historic Preservation Workshop, and the development of a Historic Preservation Course elective sponsored by the NEH to be taught in Spring 2000. (For additional background information about the projects see (Appendix 1, b), *The Development of a High School for the Preservation Arts, Fall 1999*, p. 2, "Success to Date." and the NJIT Center report for the NCPTT, *Preservation Week Report Spring 1998, published in July 1998* on the NJIT website: ***http://www.njit.edu/Directory/Centers/CABSR/cabsr_research.htm.***

IV. Classroom Testing of Model Secondary Level Lesson Plans at the Historic Preservation Workshop

The New Jersey Institute of Technology Center for Architecture and Building Science Research (NJIT Center) and the New York City Board of Education's (Board of Education) High School for Arts and Business (HS Arts & Business) have worked together over the past year a half on developing preservation-based sample lesson plans as a follow-up to the Spring 1998 Preservation Week and the 1998 Preservation Portfolio Internship Program (PPIP). In order to field test the lesson plans, the NJIT Center requested funding from the National Center for Preservation Technology and Training (NCPTT) for further Teacher Development and lesson plan development, the teaching of the lessons, and documentation of the process in 1999. Products include: Four lesson plans in four subject areas (Social Studies/History, English, Art and Science); at four grade levels (9-12); a videotape of sample classes and Welcome; evaluation of the classroom experience; and the placing the final report on the NJIT website. The NCPTT graciously approved this request and sponsored the project throughout 1999.

A. Field Testing Plan 1999

Once the NCPTT approved the lessons field test project, Kate Burns Ottavino, Director of Preservation Technology, NJIT Center, met with the H S for Arts & Business Principal Drakes and four teachers in the spring of 1999. The original agreement between the NJIT Center and the NCPTT stated that lessons would be taught in Spring and Fall 1999 (2 lessons each teacher in Spring and 2 lessons each in Fall for students in grades 9 through 12). Ms. Ottavino met with the four teachers (the social studies teacher, Kevin Lawlor moved to a new school and was replaced by a new social studies teacher, David Moyal) to review the lesson plans developed by the teachers as part of the Preservation Portfolio Internship Program (PPIP) 1998 Teacher Development. (Appendix 2,c.)

The teachers and Principal Drakes proposed that they each teach their four lessons for the four years (9-12) at one time on a Saturday in Fall 1999 using a block schedule due to problems with scheduling during the semester. They also thought a block schedule would be more effective for an interdisciplinary integrated curriculum and would be easier to assess. It was agreed that 10-15 students per class would be ideal and that special incentives would be needed to attract volunteer students on a Saturday. Upon further discussion, they suggested that this could be a really special event if they featured it as an Historic Preservation Workshop that would have as its "benchmark" the Worlds Fairs in Flushing Meadows Queens. The Worlds Fair Grounds are not only close to the HS Arts & Business, but they are both practical and diversified and allow for ample latitude for study by all four grades and subjects. The teachers agreed that they would tailor their preservation based lessons from summer 1998 to the Worlds Fair theme and that the ideal place to hold this event would be at the Queens Museum of Art New York City Building in Flushing Meadows. The Queens Museum building was originally built for the 1939 Worlds Fair (New York City Building) and used again as the New York City Building in the 1964 Worlds Fair. In between the Fairs, the New York City Building housed the first UN General Assembly (1946-52) and then became the Queens Museum of Art after the 1964 Worlds Fair. (Appendix 4,c) All agreed a change in venue from the

HS Arts & Business to the Queens Museum of Art would be an added attraction for the students and would provide hands on information about the Worlds Fairs since the museum is in the actual setting of the Fairs and has an excellent exhibit of Worlds Fairs artifacts. (Appendix 3(1))

The NJIT Center contacted Ms. Sharon Vatsky, Curator of the Queens Museum of Art and arranged to have the Historic Preservation Workshop on Saturday, October 2 from 9 a.m. through 3 p.m.

B. Teacher Development

I. Preservation Portfolio Internship Program 1998/Teacher Development (Appendix 2)

In Summer 1998, four High School of Arts and Business teachers who had participated in the Preservation Week 1998, Lynda Aron (English); Kevin Lawlor (Social Studies); Bryan Serra (Art) and Kieran McGuire (Science) were invited to continue to work with the NJIT Center on the Preservation Arts High School project. Paid by the New York City Board of Education for 80 hours over the summer, the NJIT Center planned a Teacher Development Program for the teachers that included their visiting the Preservation Portfolio Internship Program site, the Prospect Park Peristyle in Brooklyn, where two student interns, Justin Hilliard and Felipe Gilbaldo, from the HS Arts & Business were working. The teachers also took field trips with the NJIT Center staff and the student interns, that included: tours of Olmsted designed parks (Prospect Park, Central Park to compare and contrast the design and evolution of the parks); a visit to the Prospect Park Alliance Archives where they saw original documentation about the park and the buildings in the park; the New York Historical Society where they found original drawings by Stanford White of the Peristyle and were able to get copies of the drawings; the Municipal Archives and the Brooklyn Library; and a visit to host artisan sponsor, A. Ottavino Corp. stone works. The teachers also participated in a week long French American Exchange Program sponsored by the World Monuments Fund (that was part of the internship program). This extended the field experience to allow them to visit numerous preservation sites, museums, Venetian Room of the French Embassy, and various agencies. (Appendix 2 a.).

These rich experiences allowed the teachers to experience not only the on-site aspect of an actual restoration site that they could then use in their preservation-enriched academic lesson plans and classroom education, but also provided them with a wealth of resources that they could use in the development of the course materials, learning exercises and lesson plans.

The teachers were enthusiastic and quickly absorbed the preservation educational process through the summer's activities in order to use this information and process to infuse their lesson plans with preservation based material. (Appendix 2,c) As part of the Teacher Development they received materials and background information from the NJIT Center, (Appendix 2,b) were provided with architecture vocabulary and information, visited appropriate archives, libraries, and agencies where they were able to see primary

documents, and learn about sources for the project etc. At the end of the summer, they each developed four lesson plans using the turn of the 20th century benchmark building, the Brooklyn Prospect Park Peristyle and the background information they received through Teacher Development. (See Appendix 2 b & c).

2. Concepts of Teacher Development

Behind the Teacher Development activities, the concepts and elements for restoration education training includes:

- The Methodology of Historic Preservation practice
- Critical thinking processes and analytical skills
- Primary and secondary research methods
- Documentation
- Scientific analysis
- Historic analysis
- Artistic/architecture appreciation vocabulary
- Prescriptive writing skills
- Communication skills.

To accomplish this, the preservation based design for Teacher Development included teachers' participation in the on-site aspects of an actual restoration project with student interns, as discussed above, supplemented by off site archival and city agency research to demonstrate and engage the teachers in the academic components of preservation and how they are applied during the decision making processes and artisan practice. This shared learning experience with the student interns was designed to develop each teacher's ability to enrich their academic curriculum with preservation points of reference and examples. This also provided the teachers, as well as the students, with an appreciation of the high degree of skill and artistry involved in historic construction methods, the standards of excellence achievable by current restoration technology and to acquire an appreciation of even the most rudimentary restoration skills through hands on experience. By teachers sharing the restoration experience and combining it, they were able to use the experience to explore ways in which to enable the internship process to inform an in-depth interdisciplinary teaching and learning process.

C. Planning of the Activities for October 2, 1999 (Appendix 3)

Kate Burns Ottavino, Director of Preservation Technology, NJIT Center and Ruth P. Baker, Associate Director at the NJIT Center, met with the High School of Arts and Business Teachers, Lynda Aron, Bryan Serra, Kieran McGuire, and David Moyal, new Social Studies teacher (replacing Kevin Lawlor), and Principal Stephen Drakes in the Spring and Fall of 1999.

1. Preparation

Preparation and Planning for the Historic Preservation Workshop included:

(a) Scheduling

- Setting up the Schedule for the day. Congress members Ken Fisher and John Sabini were invited to Welcome the students; Director of Technical Services of the New York Landmarks Conservancy, Alex Herrera was invited to be the Keynote speaker, Sharon Vatsky, the Queens Museum Curator was invited to give a slide overview about the Worlds Fairs and the "rubbings" project of artist, Matt Mullican's granite relief depicting "A Century of Worlds Fair Buildings." (Appendix 4,a)

- Set up Schedule for Workshop rooms and tours of the Museum's Worlds Fair Exhibit and sculptor Matt Mullican's Granite Relief at the Museum site for the "rubbings" project (Appendix 4,a)

(b) Recruitment of Students

- Distributed a flyer to all students at the HS Arts & Business about the event to encourage them to attend. (The four teachers also talked with their classes about attending - most important) (Appendix 3 (a) (2))
- Sent letters of invitation to HS Arts & Business students' parents informing them about the event (asked for permission slips signed by parents) (Appendix 3,a (3)
- Sent letters of invitation to "Friends of Preservation High Project" inviting them to attend the Opening and any part of the day possible (Appendix 3,a (4))
- Arranged for refreshments for breakfast and lunch. English Teacher, Lynda Aron arranged for Worlds Fair "food" - Belgian Waffles at the end of the day
- Teachers completed lesson plans.

(c) Logistics

- Arranged for Assessment of the students and teachers with Prof. Norbert Elliot (Appendix 6)
- Arranged to have NJIT Public Relations Office write and distribute a Press Release for the media and follow up with telephone calls. (Unfortunately, it was the same day that "Sensation" opened at the Brooklyn Museum of Art and all the Press attended that event. (Appendix 3,a (5)
- Arranged for Video Documentation examples of the event (included with this report)

2. Lesson Planning and Teacher Development (Appendix 3 b)

During the Spring, Ms. Ottavino reviewed the lesson plans prepared as a result of the Summer 1998 Teacher Development (Appendix 2 c) and made comments that would assist the teachers in translating their preservation based lesson plans, using the Peristyle, for the Flushing Meadows Worlds Fairs as a benchmark. Additionally, she sent the teachers study materials about the Worlds Fairs as a subject. (Appendix 3 b (2) As further example of a preservation based teaching methodology, the NJIT Center annotated sample lesson plans developed by the Museum of the City of New York City on the Worlds Fair theme to become preservation based. (Appendix 3 b (1)) Included

were pictures of buildings/objects/sculptures with descriptions and The NJIT Center's recommendation on how to integrate each lesson with preservation learning. For instance for the benchmark 1939 Trylon and Perisphere the following was suggested: (Appendix 3 b (1), Aug. 10 memo)

- **"Science:** Discuss the materials that were used to construct the Trylon and Perisphere. How would their deterioration be likely to create aesthetic issues different from buildings more utilitarian in nature. What physical and chemical forces would have caused their deterioration. What kind of materials would be needed to have maintained these structures over the years? If these structures were replaced today, what materials might they be made of? Discuss the new materials introduced at the fair, what ones are still in use. Which materials went out of use and which have had to be abated?

- **English:** The use of symbolism in literature - literary vs. physical symbols. Why are geometric forms more powerful visually than when described in words - or are they? Can something be made more beautiful by its description than by its reality?

- **History:** The role of symbols and icons in history - when and why do political leaders borrow symbols from the past to give legitimacy to the present. How does the Perisphere and Trylon differ in its meaning from the 1960's Fair Globe?

- **Art**: Do symbols need to remain pristine to be artistically true?

D. Saturday, October 2, 1999, Classroom Testing of Model Lesson Plans at the Queens Museum of Art

On Saturday, October 2, 1999, fifty five volunteer students, four HS Arts & Business teachers, Principal Drakes and Assistant Principal Leslie Rubenstein, NJIT Center Staff, and guests gathered in the Gallery outside the Theater of the Queens Museum of Art for breakfast, to register for the Workshops (four Workshops of 12-15 students each) and to receive the schedule for the day. (Appendix 4,a)

At the start of the day's program, everyone gathered in the Auditorium for the introductions that were moderated by Kate Burns Ottavino, Director, Preservation Technology, NJIT Center. (Videotape included with report.) Brooklyn Council member Ken Fisher spoke to the students about the importance of preservation and the economic opportunities in the field by emphasizing that there is "Gold in Old." He continued by saying that there are 20,000 buildings in the city that are "one of a kind...real stuff" and that it is hard to find skilled people to restore them.

Queens Council member John Sabini, Chair of the Sub Committee on Landmarks in the New York City Council, (former chair Ken Fisher) welcomed the students and informed them that the Tiffany Glass Company had its factory in Corona (home of the HS Arts & Business). He said that the United States is a young country, just over 200 years old, and just now becoming in tune with its past. He continued that the USA is now starting

to realize that it must preserve its heritage, in effect, the past is our future. Council member Sabini picked up again on the importance of this program to learn about preservation and that it can lead to a good career path for New York City residents.
HS Arts & Business Principal, Stephen Drakes continued by thanking all the volunteer students, teachers and others in attendance. He talked about the importance of the Worlds Fair theme and its meaning for students who live within walking distance of the Fair Grounds in Flushing Meadows. Principal Drakes concluded by telling the students how fortunate they are to be pioneers in the Preservation High School project and that he looks forward to more preservation learning through an ongoing relationship with the Queens Museum of Art and the World's Fair Grounds.

Keynote speaker Alex Herrera, former Director of Technical Services with Landmarks Preservation Commission and now Director of Technical Services of the New York Landmarks Conservancy followed with an "Historic Preservation Overview." He reviewed how he had become interested in the preservation movement; his past and present work in the field; and a brief overview of the growth of interest in preservation in the USA. He said the preservation movement has empowered people and that there were few designated historic buildings in the first half of the 20th Century. Since the 1960s, the historic preservation movement has grown dramatically and now in New York City alone there are 60 Historic districts and 21,000 properties (about 2% of all properties). He then reiterated that there is "Gold in Old" and that much work needs to be done on the huge stock of historic designated buildings and artifacts. Mr. Herrera concluded that not only is this work very important but it brings much personal satisfaction as well.

Ms. Sharon Vatsky, the Queens Museum of Art Curator, spoke about the 1939 and 1964 Worlds Fairs and flavored her talk with slide examples. She then said that one of the activities of the day would be to do "rubbings" of the Matt Mullican installation, a granite relief of buildings from 100 years of World's Fairs, located near the Unisphere.

Students then broke up into their Workshops. They attended two workshops from 10-11:15 a.m. (30 minutes each) and then half had lunch while the other half did the granite relief rubbings for 45 minutes.(Appendix 7) At noon, those that had lunch then went to see the Museum's Worlds Fair Exhibit while the others had lunch.

At 12:45 p.m. the students attended two more half-hour Workshops until 2:00 p.m. Then the students who did not do the rubbings earlier went to the granite relief and the other students went to the Museum's Worlds Fair exhibit. At 2:40 p.m. they regrouped in the auditorium for the wrap up session.

Former 1998 HS Arts & Business Intern, Felipe Gilbaldo, spoke to the students about his internship experiences at the Peristyle and how he has built on these experiences over the summer 1999 by working at Estler Studios, Inc., custom fabricator of replica architectural elements for restorations, and in fact has continued to work there after school through Fall 1999. His employer brought examples of the castings he has worked on for ornamentation of buildings being restored. Felipe then encouraged the students to participate in internship opportunities wherever possible.

V. Worlds Fair Lessons - October 2, 1999

(Sample Video Tape documentation of Opening, and two lessons: Social Studies and Art included as part of the Report)

The four High School of Arts and Business Teachers, Lynda Aron (English), Bryan Serra (Art), Kieran McGuire (Science) and David Moyal, were provided materials about the Worlds Fair and sample lesson plans from the Museum of the City of New York that were annotated with preservation information and suggestions by The NJIT Center. (Appendix 3 b)

The four teachers prepared preservation-based lesson plans using the Worlds Fairs theme and developed them progressively for grades 9, 10, 11, and 12. (Appendix 5). These lessons were taught on October 2 in four Workshop settings i.e. each teacher (Social Studies, English, Art, Science) taught four classes (or workshops) using these lessons for 9th, 10th, 11th and 12th grades. There were 12-15 students in each workshop. At the end of each workshop/class, the students were asked to assess the session they attended. (Appendix 6)

A. Social Studies, David Moyal (Appendix 5,a)

David Moyal, the Social Studies Teacher, took as his aim for the 9th grade class "How do objects reflect a civilization in a certain period of time?" He then showed objects on slides from various past civilizations (Prehistoric Man; Ancient Egyptians; Ancient China; Medieval Europeans; Greeks and Romans; Native Americans) and asked the students how we got information about these civilizations. For instance, through objects: how objects were preserved, and what values of the periods were represented through pictures on the objects or just the objects themselves. He then talked about the Time Capsules that were put together at the 1939 and 1964 Worlds Fairs that won't be opened until 6939 and 6964, 5000 years from now.

He discussed the kinds of things that were placed in the capsules and how they reflect what we want people to know about us in 5000 years - everyday kinds of things and how these reflect our ideas of what is significant to ourselves. From there the students talked about what could be placed in a capsule in 2000 and how it would differ from the 1939 and 1964 capsules. Overall this was a good exercise in helping the students to understand that things we see from 5000 years ago show us something of the values and kinds of objects people had in those periods and how this can be important in our understanding of these civilizations and how some of these values have shaped what we consider important today.

Mr. Moyal's 11th grade Lesson Plan's Aim was "Why has the need for a World's Fair become a thing of the past?" For this he tried to show that the nature of World's Fairs as a place to showcase technology is moot since we are more virtual reality oriented - including the role of computer technology in different fields of business; and that it is important for schools to prepare students to use technology in these fields. They discussed that technology is moving so fast that it makes the world a lot smaller. Additionally communication methodologies and transportation allow people to learn what

is new instantaneously. With this lesson, Mr. Moyal shows that while Worlds Fairs had an important part to pay in the past, the technology of today is making the need of Worlds Fairs defunct if the idea is to show what tomorrow will be.

Mr. Moyal's 12th grade lesson plan's aim is "How do we decide whether a landmark should be preserved." For this, the students discussed the criteria for saving national landmarks; the process involved in saving monuments; and the agencies that deal with saving monuments. They then generated a list of criteria for monuments they felt should be preserved (with slides).

Following this, the class discussed particular NYC landmarks and their importance for preservation as well as who should decide which landmarks should be saved and who should pay. Finally, they discussed the kind of information they should put into a letter to persuade a Landmarks Commission to preserve or maintain a chosen building or object. The students for this lesson were encouraged to think about extant examples of buildings or objects they knew about, if and why they are important, and how to go about trying to save a building they felt was important for posterity.

B. English, Lynda Aron (Appendix 5,b)

Ms. Aron started with, "Preserve the Past...Maintain the Present...Ensure the Future." In both her lessons for 9th and 10th grades she chose to discuss the use of "Symbols". In the 9th grade she used symbols in literature i.e. the literary vs. physical symbols. She then discussed and showed illustrations of geometrics: Visual vs descriptive, aesthetics and trinkets. The students were then asked to think about: various symbols in literature; to focus on one, and to explore how a teenager might identify, react or rebel in a particular situation. In the 10th grade lesson, she honed in on symbols that trigger emotions. She asked the class, based on Flaubert's comment that "everyone's life is worth a novel," to focus on a monument, historic structure or well-known symbol to create a story and relate it to their life.

In 11th the grade lesson, Ms. Aron discussed the concept of a "benchmark" and how it is used in the context of the model curriculum being developed. She then asked them to think about how a benchmark event has affected who they are at this point in their development.

The 12th grade lesson was based on People, Places and Events: The creation of a life formed by emotional connections, values and memories. For this, Ms. Aron discussed Values and Memories, Existential Alienation and Connection. She tied this to how past generations felt after wars and the concurrent loss of meaning. Ms Aron then asked the students to discuss the polarity between nostalgia and new technologies and how to reestablish meaning. Finally she tied this to the Worlds Fairs by asking the students to explore the pace of life at the end of the millennium, and how this creates a sense of "meaninglessness." They then discussed the irony of the location of the World's Fair grounds i.e. they were once considered the portal to the future, and are now located in the view of the traffic and metropolitan situation.

Prior to the classes, Ms. Aron handed out two articles from the *New York Times*, April 20, 1964, on "Many Faiths Display Their Art, Symbols" and "Junior to be Educated--and Like it" for all the classes and asked them to read and reflect on the articles before the Workshop.

C. Art, Bryan Serra (Appendix 5,c)

For the 9th grade Workshop, Mr. Serra demonstrated the art of doing textured rubbings and discussed the day's project of going to artist Matt Mullican's granite relief of A Century of Worlds Fair Buildings that is located near the Unisphere (1964 Worlds Fair.) He provided historic reference to the 1939 and 1964 Worlds Fair materials and granite relief installation and how the students can apply this knowledge to doing rubbings of gravestones, patterns created in architectural interiors and textured finishing on materials.

The Workshops for grades 10 through 12 concentrated on developing drawing techniques in preparation to be able to draw representations of buildings and structures remaining at the Worlds Fair grounds in Flushing Meadows.

In Workshop 2 he taught the students to do basic line drawings based upon realistic and abstract direction. (See Videotape of this lesson). He also explained perspective, grid fragmentation, proportion, composition, sketch technique, line weight, harmony and transference.

In Workshop 3 the subject was Art and Design through the sketching of World's Fair Architecture and Neighborhood Park architecture. Within the lesson he explained concepts such as rendering, representation, crosshatch, blending, contrast, dynamic versus static composition and transference and pure form. Finally he reviewed the progress of the student's drawing techniques and discussed the role of the 1939 industrial engineers and architects and the role of the 1964 POP-Art influence.

In Workshop 4, Mr. Serra continued on the subject of Art and Design through Competency in Architectural Freehand Drawing. He had the students work on redesigning a New York Worlds Fair building for a "2000 Worlds Fair" utilizing classic elements of architecture and contemporary geometric pure form. He illustrated this through showing them architectural elements such as arches, columns, order, vaults, windows, geometric, organic form and symbolic representation.

D. Science, Kieran McGuire (Appendix 5,d)

Mr. McGuire used as a benchmark for all lessons Michelangelo's white Italian Marble "Pieta" brought from Rome to exhibit at the 1964 World's Fair.

His 9th grade Workshop I lesson was on Physical Science with the aim to discern the differences between physical and chemical changes in objects. He indicated that "in order to preserve, we must first know the process of change." From there Mr. McGuire addressed physical and chemical properties of substances and then applied this to the white Italian marble of the Pieta, e.g. while marble is durable physically, it is susceptible to low pH environments.

Biology was the topic of the 10th Grade Workshop II. Here Mr. McGuire discussed what is unique about each human, what is DNA, what is a genetic fingerprint, and if there is uniqueness beyond genetics that can be observed. From there he looked at why original art is important and what is unique in each artist. He tied this into preservation by discussing the impact on decisions to restore or preserve unique works of art or architecture Finally, Mr. McGuire had a dialog with the students on why the original Pieta was brought to the World's Fair instead of merely making and sending a copy.

Workshop III, another 10th Grade topic, was Earth Science. First he asked what is a Metamorphic Rock, how is it formed and from what. He then told the students that the marble used to sculpt the Pieta is a metamorphic rock and discussed its properties, how it is formed and the various types. Other topics included why use this marble rather than other material, where do you find the marble, what other use can it be used for etc.

Workshop IV, Chemistry for 11th grade addressed Acid Rain and what is pH.
Mr. McGuire talked about the damage it does to limestone and marble structures and statues, the components of carbonic acid, where it comes from, how to measure it and how to prevent the damage it does. He tied it into the Pieta by discussing the precautions taken when the statue was brought from Rome to New York.

VI. Assessment

Evaluation of the Historic Preservation Workshops (Norbert Elliot, Professor and Chair, Department of Humanities and Social Science, NJIT)

On October 2, 1999, my colleague (Pamela Margerm) and I served as external consultants for the Historic Preservation workshop held at the Queens Museum of Art. We asked for the instructor's materials so that we could familiarize ourselves with the planned instruction. In anticipation of the day of the workshop, we designed six surveys. Surveys 1-4 were structured to assess the content and instructional effectiveness of each of three workshops. Survey 5 served as an end-of-day survey, and Survey 6 allowed the instructors to provide their perceptions of the day. Along with the quantitatively designed surveys, we decided to provide a qualitative evaluation of the day by attending sessions in each of the content areas (although logistics and time constraints prevented us from attending all of the workshops); hence, Ms. Margerm and I took detailed notes on the workshops in art, science, social studies, and English.

The Workshop in Art

Among the workshops in art, one was designed to give students a background in the nature and significance of rubbings. In that all students had an opportunity to perform rubbings on the granite relief of the World's Fair by artist Matt Mullican (an artifact located on the grounds of the Queens Museum) the workshops by Mr. Bryan Sierra were well integrated into the day's activities. Other workshops focused on basic drawing, sketching, and freehand drawing. Each of these workshops stressed technique in reference to architecture and its historical context; that is, students were encouraged to see line, form, space, color, texture, and patterns as ways of perception in describing a building.

The lessons were very clearly designed and the students were encouraged to express themselves. The lessons were clearly broken down and each student was able to produce an artifact. All students, we observed, were engaged in the lesson; each was given personalized attention and guidance.

At the end of each of the sessions, we distributed the survey below. The summative results (there were four workshops in art presented) have been recorded in the form:

Survey 1. Workshop in Art
Grades 9-12

Please circle your grade level:	9	10	11	12	Unknown
Total Respondents:	**9**	**3**	**7**	**31**	**4**

Think about your experience in the workshop you just attended and complete the following questions:

1. How would you rate the clarity of the lesson?
   Total Responses:54

Extremely Clear	Very Clear	Mostly Clear	Somewhat Clear	Totally Unclear
33 **61.1%**	**17** **31.48%**	**4** **7.4%**	**0**	**0**

2. How interesting did you find the lesson?
   Total responses: 54

Extremely Clear	Very Clear	Mostly Clear	Somewhat Clear	Totally Unclear
38 **70.37%**	**11** **20.37%**	**5** **9.25%**	**0**	**0**

3. How useful was the lesson in helping you learn more about preservation?
   Total Responses: 54

Extremely Clear	Very Clear	Mostly Clear	Somewhat Clear	Totally Unclear
31 **57.4%**	**13** **24.07%**	**7** **13%**	**3** **5.55%**	**0**

4. As a result of the workshop, do you believe that you have a greater understanding of the ways that art can help you understand more about the past?

   Total Responses: 54

Yes	Unsure	No
47 **87.3%**	**7** **13%**	**0**

5. How would you rate the overall quality of the workshop?
   Total Responses: 54

Excellent	Very Good	Average	Below Average	A Failure
38 **70.37%**	**14** **28%**	**2** **3.7%**	**0**	**0**

6. Would you recommend the workshop to other students?
   Total Responses: 54

Definitely Would	Probably Would	Maybe would/Maybe would not	Probably Would Not	Definitely Would Not
47 **87%**	**5** **9.25%**	**2** **3.7%**	**0**	**0**

On the question of clarity, 92% of the students rated the lesson wither extremely clear or very clear. Ninety percent found the lesson extremely interesting or very interesting. Eighty one percent of the students found the lesson helped them learn more about preservation, while eighty seven percent of the students believed the workshop in art provided a greater understanding of the ways that art leads to an enhanced understanding of the past. Ninety eight percent of the students described the workshop as excellent or very good. Eighty seven percent of the students would definitely recommend the workshop to other students.

The Workshop in Science

Presented by Mr. Kieran McGuire, the workshop in science used sculpture as a vehicle to explain concepts in basic science. In the workshop I attended, Michaelango's Pieta was used to emphasize the uniqueness of the human body, a discussion that led to the structure of DNA. Skillfully, the instructor led students back to a discussion of preservation as an act of securing the uniqueness of a cultural artifact. I found this a most impressive tour de force by the instructor.

At the end of each of the sessions, we distributed the survey below. The summative results (there were four workshops in science presented) have been recorded in the form:

Survey 2. Workshop in Science
Grades 9-12

Please circle your grade level:	9	10	11	12	none given
Total Respondents:	**9**	**4**	**8**	**33**	**1**

Think about your experience in the workshop you just attended and complete the following questions:

1. How would you rate the clarity of the lesson?
   Total Responses: 55

Extremely Clear	Very Clear	Mostly Clear	Somewhat Clear	Totally Unclear
19 **34.54%**	**26** **47.27%**	**8** **14.54**	**2** **3.6%**	**0**

2. How interesting did you find the lesson?
   Total Responses: 55

Extremely Clear	Very Clear	Mostly Clear	Somewhat Clear	Totally Unclear
20 **36.36%**	**25** **45.45%**	**9** **16.36%**	**1** **1.81%**	**0**

3. How useful was the lesson in helping you learn more about preservation?
   Total Responses: 55

Extremely Clear	Very Clear	Mostly Clear	Somewhat Clear	Totally Unclear
28 **50.90%**	**18** **32.72%**	**6** **10.90%**	**3** **5.45%**	**0**

4. As a result of the workshop, do you believe that you have a greater understanding of the ways that science can help you understand more about historic preservation?
   Total Responses: 55

Yes	Unsure	No
52 **94.54%**	**3** **5.45%**	**0**

5. How would you rate the overall quality of the workshop?
   Total Responses: 55

Excellent	Very Good	Average	Below Average	A Failure
30 **54.54%**	**21** **38.18%**	**4** **7.27%**	**0**	**0**

6. Would you recommend the workshop to other students?
   Total Responses: 55

Definitely Would	Probably Would	Maybe would/Maybe would not	Probably Would Not	Definitely Would Not
43 **78.18%**	**10** **18.18%**	**1** **1.81%**	**1** **1.81%**	**0**

On the question of clarity, 82% of the students rated the lesson either extremely clear or very clear. Eighty two percent found the lesson extremely interesting or very interesting. Eighty three percent of the students found the lesson helped them learn more about preservation, while ninety four percent of the students believed the workshop in science provided a greater understanding of the ways that science leads to an enhanced understanding of the past. Ninety two percent of the students described the workshop as excellent or very good. Ninety six percent of the students would definitely recommend the workshop to other students.

The Workshop in Social Studies

The workshops in social studies were presented by Mr. David Moyal. Through different slide presentations, Mr. Moyal took students through carefully selected examples of the art and artifacts from Africa, India, China, Egypt, Europe. In the session I attended, we discussed the Parthenon (and its relationship to the Lincoln Memorial) Reims Cathedral, the Stadium Tribune in Germany, and the Eiffel Tower. As with the other sessions, students were engaged in discussion both during and after the presentation. In the session Ms. Margerm attended, students made the subtle point that, while often architecture was preserved by accident, architectural monuments were also preserved by intention so that future generations could benefit by their existence.

At the end of each of the sessions, we distributed the survey below. The summative results (there were four workshops in social science presented) have been recorded in the form:

Survey 3. Workshop in Social Studies
Grades 9-12

Please circle your grade level:	9	10	11	12	Unknown
Total Respondents:	10	4	10	33	3

Think about your experience in the workshop you just attended and complete the following questions:

1. How would you rate the clarity of the lesson?
   Total Responses: 60

Extremely Clear	Very Clear	Mostly Clear	Somewhat Clear	Totally Unclear
40 **66.66%**	**18** **30%**	**2** **3.33%**	**0**	**0**

2. How interesting did you find the lesson?
   Total Responses: 60

Extremely Clear	Very Clear	Mostly Clear	Somewhat Clear	Totally Unclear
42 **70%**	**14** **23.33%**	**4** **6.66%**	**0**	**0**

3. How useful was the lesson in helping you learn more about preservation?
   Total Responses: 60

Extremely Clear	Very Clear	Mostly Clear	Somewhat Clear	Totally Unclear
44 **73.33%**	**13** **21.66%**	**0**	**3** **5%**	**0**

4. As a result of the workshop, do you believe that you have a greater understanding of the ways that the social sciences can help you understand more about the past?
   Total Responses:60

Yes	Unsure	No
57 **95%**	**3** **5%**	**0**

5. How would you rate the overall quality of the workshop?
   Total Responses: 60

Excellent	Very Good	Average	Below Average	A Failure
45 **75%**	**15** **25%**	**0**	**0**	**0**

6. Would you recommend the workshop to other students?
   Total Responses: 60

Definitely Would	Probably Would	Maybe would/Maybe would not	Probably Would Not	Definitely Would Not
50 **90%**	**10** **10%**	**0**	**0**	**0**

On the question of clarity, 96% of the students rated the lesson either extremely clear or very clear. Ninety three percent found the lesson extremely interesting or very interesting. Ninety five percent of the students found the lesson helped them learn more about preservation, while ninety five percent of the students believed the workshop in social science provided a greater understanding of the ways that social science leads to an enhanced understanding of the past. One hundred percent of the students described the workshop as excellent or very good. Ninety percent of the students would definitely recommend the workshop to other students.

Survey 4: The Workshop in English

The workshop in English that I attended began with a postcard of the 1964 World's Fair. We then moved on to reading a passage of E.L. Doctorow's World's Fair in which the narrator tells us of his desire to be an All American Boy as a "means of entry into a self-regulated world." Ms. Lynda Aron, the instructor, then led a discussion of this world, recreated by the novelist, that was long past. It is for this sense of connection, Ms. Aron suggested, that we preserve monuments.

At the end of each of the sessions, we distributed the survey below. The summative results (there were four workshops in English presented) have been recorded in the form:

Survey 4. Workshop in English
Grades 9-12

Please circle your grade level:	9	10	11	12	Unknown
Total Respondents:	9	2	8	32	7

Think about your experience in the workshop you just attended and complete the following questions:

1. How would you rate the clarity of the lesson?
   Total Responses: 58

Extremely Clear	Very Clear	Mostly Clear	Somewhat Clear	Totally Unclear
33 **56.89%**	**20** **34.48%**	**5** **8.62%**	**0**	**0**

2. How interesting did you find the lesson?
   Total Responses: 58

Extremely Clear	Very Clear	Mostly Clear	Somewhat Clear	Totally Unclear
34 **58.62%**	**19** **32.75%**	**2** **3.44%**	**3** **5.17%**	**0**

3. How useful was the lesson in helping you learn more about preservation?
   Total Responses: 58

Extremely Clear	Very Clear	Mostly Clear	Somewhat Clear	Totally Unclear
34 **58.62%**	**17** **29.32%**	**6** **10.34%**	**1** **1.72%**	**0**

4. As a result of the workshop, do you believe that you have a greater understanding of the ways that reading literature can help you understand more about the past?
   Total Responses:58

Yes	Unsure	No
48 **82.75%**	**9** **15.51**	**1** **1.72%**

5. How would you rate the overall quality of the workshop?
   Total Responses: 58

Excellent	Very Good	Average	Below Average	A Failure
39 **67.24%**	**14** **24.13%**	**4** **6.89%**	**1** **1.72%**	**0**

6. Would you recommend the workshop to other students?
   Total Responses:58

Definitely Would	Probably Would	Maybe would/Maybe would not	Probably Would Not	Definitely Would Not
47 **81.3%**	**6** **10.34%**	**4** **6.89%**	**1** **1.72%**	**0**

On the question of clarity, 90% of the students rated the lesson either extremely clear or very clear. Ninety one percent found the lesson extremely interesting or very interesting. Eighty eight percent of the students found the lesson helped them learn more about preservation, while eighty three percent of the students believed the workshop in English provided a greater understanding of the ways that English leads to an enhanced understanding of the past. Ninety one percent of the students described the workshop as excellent or very good. Eighty one percent of the students would definitely recommend the workshop to other students.

The End-of-Day Survey

Following a presentation of one student's field preservation experiences from the previous summer, students were encouraged to complete a voluntary assignment that could lead to a paid internship. At that time, we distributed the survey below:

Survey 5. Historic Preservation Workshop at Queens Museum of Art End-of-Day Survey

Circle your grade level:	9	10	11	12	Unknown
Total Respondents:	**10**	**3**	**8**	**24**	**3**

Please think about the activities you experienced today and complete the following questions:

1. What was the best part of the day?
   Total Responses: 48

The Opening Session (The Welcome, Keynote Speaker, and Worlds Fair Presentation	The Workshops Presented by the Teachers	The Visit to the Worlds Fair Exhibit at the Queens Museum	The Rubbings of the Granite Relief	The Wrap-up and End of Day Activities
1 **2%**	**11** **23%**	**5** **10%**	**31** **65%**	**0**

2. If you could, how would you change the day?
   Total Responses: 48

I'd like more lectures; they would give me a better overall picture.	I'd like more workshop time.	I'd like to have had more time to visit the Exhibit.	I'd like to have had more time to work on the rubbings.	I'd would liked to have had more time to sum up the day.
4 **8.3%**	**12** **25%**	**4** **8.3%**	**27** **56%**	**1** **2%**

3. A primary goal today was to allow you to understand the importance of historic preservation. How would you describe your attitude now toward preservation?
   Total Responses: 46

I believe that preservation is an important way to capture the past, maintain the present, and ensure the future.	I believe that preservation is an important activity, but I am unsure of how it relates to me or to the world in which I live.	While preservation may be important, I do not believe it is a relevant activity.
41 **89%**	**5** **10%**	**1** **1%**

4. How would you evaluate the entire day?
Total Responses:48

Excellent	Very Good	Average	Below Average	Failure
37 **77%**	**9** **19%**	**2** **4%**	**0**	**0**

The students found the workshops to be the best part of the day. They enjoyed most the opportunity to do hands-on work, as exemplified by the 56% who best enjoyed the rubbings. Eighty nine percent agreed that the primary goal of the day was met, and ninety six percent of the students described the day as either excellent or very good.

The Instructors' Survey

Shortly after 3:00 p.m., we distributed six questions to our instructors. Their answers are recorded below:

Survey 6. Historic Preservation Workshop at Queens Museum of Art
Instructors' Survey

1. **Do you believe that today's activities enhanced the students' attitudes toward historic preservation?**

Mr. Serra: Yes, positive.

Mr. Kieran: Absolutely—and the historic preservation aspect of the presentation enhanced the students' attitudes toward the subject matter.

Mr. Moyal: I think today's activities gave the students an interest they never expected to have.

Ms. Aron: Most definitely.

2. **What was the most significant aspect of today's activities?**

Mr. Serra: The slide presentation and dialogue at the beginning of the day. The rubbings and the production of artwork to support vital learning skills.

Mr. Kieran: The linking of preservation and science in that the preservation applications served to motivate the students to greater effort in understanding what is otherwise dry and esoteric material.

Mr. Moyal: The hands on activities like the rubbings and some of the workshops.

Ms. Aron: Students' interest and enthusiasm!

3. Do you believe that today's activities provided you an opportunity to design lessons that will be carried back into your own classroom?

Mr. Serra: Yes, we exchange our lesson plans and compare. My projects can be integrated in most of our arts curriculum!

Mr. Kieran: Absolutely—as well as encouraging me to more consistently include applications in my lessons.

Mr. Moyal: Definitely. Being a social science teacher, today's lessons have applications that can be used by my social science class.

Ms. Aron: Yes!

4. Given the opportunity, how would you restructure the day?

Mr. Serra: More freshmen and sophomores needed.

Mr. Kieran: Add a student roundtable to sum up and provide student brainstorming and interaction.

Mr. Moyal: More hands on activities.

Ms. Aron: Have someone else organize the food! [This lot fell to Ms. Aron.]

5. How do you think the students responded to the day?

Mr. Serra: They seemed quite pleased with all of the activities available.

Mr. Kieran: Positively, across the board.

Mr. Moyal: Extremely positive.

Ms. Aron: With curiosity and excitement.

6. Using the scale below, how would you judge the day?

Excellent 3	Very Good 1	Average	Below Average	A Failure

Although spent by the activities of the day, the instructors described the day as most positive.

Conclusion

By any measure—quantitative or qualitative—the day was clearly an enormous success. The materials were creatively selected, the presentations were engaging, and the students were animated.

In that I was fortunate to have served as program evaluator for the 1998 Preservation Week, let me conclude with two essential points. The first is that the program now has maturity. The instructors now have a consistent frame of reference—preservation—that

is intertwined in the fabric of instruction. The materials are no longer merely presented; now they are threaded into content-level discussions. The discussion by Mr. McGuire on DNA, launched from a discussion of the Pieta, demonstrated the degree with which the material has been mastered by these talented instructors.

The second point is that the approach to curriculum—developed by the The Center for Architecture and Building Science Research and the staff of the High School of Arts and Business—needs to be disseminated and considered as a national model of instruction. The sponsors of this project, I recommend, should now identify a broader vehicle to disseminate their ideas—perhaps more publication, perhaps more funding, perhaps a larger laboratory dedicated to the preservation arts. Regardless of the vehicle, however, the sponsors have achieved something here that is unique and very, very significant.

VII. Conclusion

The October 2, 1999 field testing of model secondary level historic preservation based lesson plans at an Historic Preservation Workshop built directly on the Spring 1998 Preservation Week, sponsored by the NCPTT, for which four High School of Arts and Business teachers developed and taught a preservation based lesson plan. The summer 1998 and 1999 Preservation Portfolio Internship Programs (PPIP) then engaged student interns and provided a venue for Teacher Development. Through the summer 1998 PPIP and Teacher Development, the four teachers developed four lesson plans each using the Turn of the 20th Century Peristyle as the benchmark.

As a result of these experiences, it allowed the four teachers to use this knowledge to develop and test four new lessons each for grades 9 through 12 for this project using the Worlds Fairs in Flushing Meadows New York as the benchmark.

This holistically integrated preservation infused academic curriculum was presented as a one day Historic Preservation Workshop in October 1999. This remarkable day brought fifty-five volunteer students from the High School of Arts and Business to the Queens Museum of Art to attend four preservation workshops each (Social Studies, English, Art, Science), to hear outstanding speakers from government, and preservation related agencies, and to learn about the art of "rubbings" as well as to have the opportunity to see the Worlds Fair grounds and visit the museum's Worlds Fairs exhibit and New York City Panorama model.

Throughout the day, the students maintained a steady interest and enthusiasm. In the students' assessment of their classes and of the day as a whole, they were uniformly positive in their reaction to the preservation information and learning that took place. The teachers continue to show a great deal of interest and grow in proficiency with each opportunity to work on this project.

Overall, through the successes of past and current pilot programs of the Preservation High School project, this program will continue to build on these experiences to fulfill the reality of becoming a full Preservation Arts High School.

VIII. List of Appendices

I. a. Sustainable Urban Preservation, Developing a Model Program, New York: WMF 1997
   b. The Development of a High School for the Preservation Arts, Fall 1999

2. Preservation Portfolio Internship Program Summer 1998
   a. Schedule of summer activities
   b. Teacher Development Curriculum Development Material
   c. Teacher Lesson Plans from summer 1998
      (1) English
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3. Historic Preservation Workshop - October 2, 1999 -Theme: Worlds Fairs
   a. General
      (I) Memo of Understanding to S. Drakes, HSAB Principal
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   b. Teacher Development (for October 2, 1999)
      (1) NJIT Center Curriculum Development. Information to Teachers (2 memos with suggestions)
      (2) Curriculum Development materials for teachers
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4. Historic Preservation Workshop - Worlds Fair Theme
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6. Assessment

7. Photographs of the Historic Preservation Workshop

WORLD MONUMENTS FUND

APPENDIX 1 A

SUSTAINABLE URBAN PRESERVATION
DEVELOPING A MODEL PROGRAM FOR NEW YORK

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THIS PROJECT HAS BEEN MADE POSSIBLE BY A GENEROUS GRANT FROM THE ROCKEFELLER BROTHERS FUND.

Instead of remedial government programs that target the most distasteful and politically embarrassing symptoms of mega-city crisis, we may be ready now to consider much broader-based experiments in urban preservation and sustainable development.

A MODEL FOR JUSTIFYING SUSTAINABLE URBAN PRESERVATION

One way to begin to make urban preservation relevant in the context of sustainable development is to analyze the impact that urban preservation would have compared with new building and development. Which option proves to be the sustainable one? Which option allows us to "meet the needs of the present without compromising the ability of future generations to meet their own needs"?

Let us examine here the impact of these two options on the social, human, material, and natural capital of New York City. Which creates greater economic savings? Which brings with it greater additional benefits to enhance social cohesion? The following brief discussion is intended to provoke an interdisciplinary effort to reconceptualize our thinking, find new ways of looking at urban problems, spur dialogue, and build a new consensus.

Social Capital

The notion of "social capital" is the most abstract of the four capital stocks and the most difficult to quantify, yet perhaps the most important. If community members preserve a sense of identity connected to the place in which they live, they will be able to meet the constant challenges posed by mega-city pressures with a positive sense of possibility and pride in achievement.

This intangible sense of social cohesion based around shared ethical values is a capital stock of tremendous potency and volatility. Harnessed properly, it leads to sustainability and the highest achievements of civilized capacity. By way of example, we could argue that ancient Athens, Rome in its glory or Florence during the Renaissance had a stock of social capital unparalleled in the western world. Yet, obversely, if social capital cannot be preserved, its energy is dissipated in explosions and declines so rapid that all hope is lost; communities become maimed, crippled and ruled by cynicism, despair, and violence.

How much stock does New York City possess of social capital? Contradictory images and thoughts immediately come to mind, but if one poll is to be believed, overall the stock is quite substantial: only 7 percent of New York residents cite a sense of community as a problem. Inner city neighborhoods have traditionally been and will continue into the future as the first destination for new immigrant groups, who bring with them shared cultural and social values. The challenge becomes how to improve the quality of life and ensure social equity, a healthy environment and economic opportunity so that this capital is not drained.

Evidence shows that the benefits of historic preservation succeed in instilling civic pride and creating a social confidence, and so helps to preserve social capital. With urban preservation, for example, come tourism and the material and psychological benefits of living in communities admired by visitors from afar. Similarly, studies in more than a dozen cities around the nation have shown that property values benefit from urban preservation. With preservation also comes an improved quality of life stemming from the strengthening of community

values. An involved 24-hour neighborhood, for example, reduces crime, vandalism and littering, and attracts new business.

By contrast, new building can have the opposite effect. For example, consider an inner city strip shopping center. It has to spend $2 more per square foot than a comparable suburban shopping center for full-time security guard, increased lighting, and continuous cleaning. Total operating costs as a result rise by 15 percent.

On a larger scale, entire communities can be destroyed by new building precisely because the notion of the existence of a stock of social capital is not recognized. In 1994, there were plans afoot to demolish the 124 buildings of the Nehemiah Project in East New York. A *New York Newsday* editorial by Roberta Brandes Gratz, author of *The Living City* and president of the Eldridge Street Project in New York, criticized the proposed demolition and made an appeal to preserve the social capital that would otherwise be wasted:

> *"Housing alone does not make a neighborhood and it is a moral outrage to throw out people with long social ties to the community, people who struggled against drugs and crime, long-term owners who could not get mortgages during the hard times, who were red-lined out of loans to improve the area but who stayed and worked hard against deterioration, always with the faith that things would get better. Many poor people here with what are traditionally defined as middle-class values are being shoved out to make way for moderate-income homeowners. This displacement is rationalized by pretending that poor people can't contribute to neighborhood stability, and want to leave anyway at the first opportunity.*
>
> *The traditional New York neighborhood model is being emulated everywhere except in our own backyard. Can't we learn from ourselves?"*

Human Capital

One problem that continues to vex politicians and social workers responsible for addressing the problems of this nation's inner cities is unemployment, particularly among youth. Job programs historically have in general not proved successful. For example, many federally funded federal job programs spend between $2000 to $4000 per person and last two to three months. As one youth skills training leader commented once, "With $2000 you can just get them dressed up and sent to a job interview." Job training requires a long term investment, and for this reason, urban preservation projects can provide the context for job training and increase a community's stock of human capital.

According to the New York City Parks Department (Rabinowitz, 1994), there are no current programs in the New York City university art school system for preservation and art conservation. Few people are trained in the artisan skills of stone-cutting and mold-making. In short, many restoration architects are forced to specify replacement materials and techniques or abandon plans for preservation because "you can't get that kind of work anymore."

Studies have shown that job creation is stronger in preservation work than in new construction, as preservation work is more labor intensive. Further, the Lower Manhattan Task Force calculated the bene-

fits of jobs retained through its preservation efforts. Experts calculated that 3000 jobs will be retained by the Lower Manhattan preservation effort with each job having a net present value of $115,367. In addition, preservation creates five more construction jobs and three more permanent jobs than new construction for every $1 million invested. (The City of New York, Lower Manhattan Task Force, 1994)

The principles of social cost accounting can be used to calculate the benefit of training one craftsperson. Assume a 19-year-old unemployed youth living in public housing and receiving approximately $7,000 in total public assistance. He enters a preservation craftsperson skills training program at $10 per hour. Upon completion of the program, he becomes an apprentice at $25,000 annual salary with benefits. Using actuarial computations, the societal income for one trained craftsperson turns out to be $397,089.

These kinds of facts argue strongly in favor of a craftsperson training program targeting disadvantaged minority youth and workers in need of skills retraining, as an adjunct of sustainable preservation programs. (See essay, following). Programs of this sort would entail marshalling a diverse coalition of support to provide the necessary leadership, commitment, and financing: business, both large and small; community development groups, local government, educational institutions, and unions. Necessary components include comprehensive social service support, ties to formal educational institutions and community groups, and a sympathetic and active apprenticeship program.

While easily described in the abstract, such programs need to be more fully articulated and brokered through the maze of city politics and bureaucracy and supported by private enterprise. Just as there is an unused resource in the heritage of New York City, so there is a needy base of human capital in the city that could be strengthened through training by and service to programs of sustainable urban preservation.

Material Capital

Nationwide studies show that development is consistently steady in historic districts in terms of work permit applications; and in Denver's historic preservation area, 114 new businesses were created with 450 new jobs despite a severe recession.

One reason that urban preservation can bring positive economic development is because it preserves material capital. This is most clearly seen in savings on energy and landfill costs, as well as the reduced need for materials demanded by wholly new construction.

The City of New York Lower Manhattan Task Force analyzed energy cost savings, and was able to justify the following incentive: if a building owner improved his building at least 20 percent of the current assess value, the city could offer a 30 percent reduction in electricity costs and 20 percent of natural gas costs over 12 years.

Landfill space is quickly running out in New York City, requiring a major solid waste management system transformation. Studies during the late 1980s found that construction waste accounted for 30 percent to 50 percent of the solid waste in urban landfills, and that rehabilitation generates approximately 67 percent less solid waste than new construction.

Urban preservation can achieve substantial savings for the municipal solid waste man-

agement budget as well. If 30 percent of new construction is replaced by rehabilitation, the generation of more than 417,000 tons of waste will be avoided, saving the city more than $30 million.

Preservation efforts—as distinct from rehabilitation—might generate even less solid waste and require even less in the way of new materials and energy consumption.

Natural Capital

Urban preservation allows the built environment to remain and helps protect existing natural capital. Zoning plays an important role in the sustainability of a city. Zoning incentives that do not favor the preservation of the city built environment spur demolition and the sprawl of new development. Limits to neighborhood growth and the inclusion of greenways provide an impetus for human scale development that preserves wet lands, curbs automobile traffic, and does not overburden infrastructure.

Furthermore, research conducted over the last twenty years shows that rehabilitation work typically puts less of a burden on water and sewage infrastructure than new development. This translates into a cleaner environment while simultaneously providing open space for inhabitants. It is important to note that these factors also strongly influence perceptions of regional competitiveness.

CONCLUSION

Most supporters of sustainable development have no background in historic preservation but nevertheless are motivated to create environmentally compatible and more livable communities. Historic preservationists are seeking to preserve urban heritage. The challenge lies in seeing the cogent intersection of both movements. Urban preservation can become a catalyst for crafting a sustainable future from the nonrenewable resource of urban heritage. Environmental conservation together with strong social-equity arguments makes a cogent combination through which to enlarge the constituency for making a new kind of sustainable urban investment.

Proposal To Create A Vocational/Technical High School For The Restoration Arts

Submitted by Kate Burns Ottavino, M. Arch., M.S. Historic Preservation
Director: Preservation Technology Center for Architecture & Building Science Research, New Jersey Institute of Technology (NJIT)

THE NEED

The need to develop an educational training program for a high school curriculum on the Restoration Arts stems from a shortage of trained restoration artisans in the building trades, a shortage acknowledged and of concern professional architects, engineers and preservationists, educators, contractors, and building owners alike. In large measure this shortage is the result of an ever-increasing number of historic districts, heritage areas, landmark and landmark eligible structures. The increase in our nation's awareness and desire to protect and perpetuate the life of its historic properties stems from the enactment of Federal legislation, the Historic Preservation Act, establishing the Advisory Council on Historic preservation and the National Register of Historic Places in 1966. This Act also spurred the formation of local Landmark Commissions across the country. However, for several reasons, training in both the public and private sector has not kept pace with the growing needs of the residential and main street commercial renovation/restoration markets. These reasons include lack of managerial commitment, costs, and a scarcity of resources for ongoing funding.

As a result, demand for qualified restoration artisans exceeds the supply in the market place today.

Despite this shortage, a recent analysis of the construction industry by the American Institute of Architects shows that spending in the renovation/restoration sector of the building industry has increased at a rate of 7 percent per year over the past fifteen years and now occupies 44 percent of the volume of construction work in the United States (AIA Journal/February 1996). In New Jersey, for every $1 million expended on historic rehabilitation nearly 75 jobs are created, of which 39 are in the construction, manufacturing, retail and wholesale trades (New Jersey Historic Trust, "Historic Rehab Pays Off Big for New Jersey"). In New York city there are 958 individually designated landmarks and 68 historic Districts comprised of 20,260 buildings (New York City Landmarks Commission). These staggering figures, combined with the fact that for every $1 million invested in the rehabilitation of historic properties there is $2.75 million in economic activity generated, has led members of both parties in Congress to co-sponsor the Historic Home Ownership Tax Act" (S.1002 & H.R. 1662) in order to encourage more residential rehabilitation investment.

Congress has realized that homeownership tax credits will foster a stronger economic environment and create skilled jobs, which will more than offset the lost tax revenue. These tax credits, combined with the U.S. Bureau of Labor projections that the U.S. will need another 35,000 bricklayers and stone masons within the next ten years (while projecting only moderate overall economic growth), are strong indicators of

a healthy and growing job market in the skilled masonry and trowel trades alone (International Masonry Institute Today, January 1996).

It is time for our Vocational/Technical High Schools to take the lead in capturing this skilled job market for its graduates by preparing their students to serve the growing number of homeowners, apartment owners, and main street commercial building owners undertaking the renovation/restoration of their historic properties. A graduate of the Restoration Arts Program could expect to earn between $10 and $20 dollars per hour in their first year of employment depending upon their level of skill. These wages, are at least comparable to those of beginning college graduates pay scale. Further, the Restoration Arts High School graduate will be able to realize the benefits without having to invest the time and money higher professional education required to earn similar wages in alternate fields, with regard to earnings growth, the wages in the field for a journeyman artisan employed at a union scale can be as high as $65.00 an hour including benefits in New York City. The availability of high-quality, high skilled jobs will afford the graduate of a Preservation High School a challenging, stimulating, and rewarding future.

CURRICULUM GOALS AND REQUIREMENTS

Currently most building preservation programs are geared to the college and masters degree level participant, giving rise to either a "white-collar" or counter-culture image of restoration practice. For more hands-on instruction, these academic programs are supplemented by short term intensive training" sessions provided by non-academic institutions or centers and a conferences in the form of workshops. Such "intensive training" courses are generally open to all who wish to participate and pay the requisite fees. These courses are usually brief in nature, addressing either the state of the art of a particular area in preservation or a specific problem commonly found during the restoration of certain building materials, with titles such as "How to Clean Masonry" or "How to Make a Replica Plaster Medallion."

What does not exist is a program geared to developing a more traditionally trade-based artisan who specializes in restoration. This is the constituency that must be trained to meet the growing restoration needs of small business and homeowners. Critical to the development of a broader-based restoration artisan constituency is a systematic restoration arts training program at the apprenticeship level. The systematic training required by such a program could be most successfully administered within the framework of a Vocational/Technical High School. There are many aspects to training at this level which are helpful to the students. One example is the discipline is best fostered within a framework that is prepared to offer the appropriate professional and social support systems that may be needed to integrate students into the expectations and requirements of the working world.

The concept of a Vocational/Technical High School program for the Restoration Arts is modeled in part upon the development of Vocational High Schools for industries such as the automotive, aviation, and printing trades before World War II as well as the High School of the Performing Arts in New York City. In brief, the program would consist of an integrated curriculum

devoted to the development of young people's abilities in the Restoration Arts by way of both hands-on and classroom training. An integrated curriculum would emphasize the building arts in the context of the academic curriculum in addition to the practical trade techniques provided by shop training. For example, in an American History course Thomas Jefferson's choice of the classical style of architecture to represent our young nation would be discussed in the context of the Greek ideal of a democracy as a model for the United States Government. Other subjects such Chemistry, Physics and Geology would be illustrated with experiments involving the properties and constituents of building materials including how they are formed and how they deteriorate. Class trips would be taken to look at neighborhoods with historic brick patterns and identify case studies of building material deterioration such as stone stoops, metal cornices, and wooden porches.

Shop work would include introductory courses in each of the building materials to enable the student to select the trade of his/her choice. The curriculum would provide the student, in combination with classroom training, a minimum of 480 hours of practical training in the restoration trade of their choice, prior to undertaking a summer internship program. Such preliminary training would enable the student to accrue on-the-job training with the status of an apprentice during the summer. Over a period of three to four summers, a full year of apprenticeship could be served prior to graduation. An accelerated apprenticeship program for interested and qualified students might be developed, depending upon the number of hours allocated during the academic year and the degree of industry participation.

A critical component to the success of a high school program for the Restoration Arts will be its link to local industry. Existing industry will be able to provide the infrastructure for skilled apprenticeships to be undertaken in a realistic work environment. Such an environment will provide the necessary equipment for training in its proper context, with Journeymen Supervisors overseeing student efforts on real-life projects. Further, by collaboration with industry, the student will get quality training without a massive and redundant investment in "tooling-up" by the school.

In short, the thrust of the curriculum is to create an integrated academic and hands-on restoration training program whereby an educated and enlightened work force capable of highly skilled restoration in the traditional building arts can be developed.

THE ROLE OF THE CENTER FOR ARCHITECTURE AND BUILDING SCIENCE RESEARCH:

The staff of NJIT are uniquely qualified to develop the criteria and curriculum for a vocational/technical training program which will satisfy the skills and academic development requirements of a Restoration Arts training Program. The experience of our staff in the academic requirements of the discipline as well as the hands-on skills development of the restoration arts represents over twenty-five years of leadership in the field of Historic Preservation.

The technical and academic areas of training will be integrated by the Center into the existing curriculum as provided by the current Vocational/Technical High School

course selection. The curriculum for each of the courses in both technical and academic areas will be modified by the Center to include the core requirements of a Restoration Arts Program. In addition, criteria for the qualifications of supplementary faculty for teaching the historic preservation aspects of these courses will be prescribed. Actual faculty members can be preliminary recommended by the Center for specialized teaching unique to Restoration Arts.

The Occupational Profile and Shop Competency Certificate requirements of the State will also be reviewed and specific criteria for Restoration Arts performance levels will be proposed for incorporation into the Certificate's requirements. Selection criteria for industry participation in an AP (apprenticeship program) will be identified by the Center as well as potential local industry participants.

The appointment of an Advisory Board is recommended for a Preservation High School. The Center would recommended those institutions whose members would be appropriate to serve on such a Board, and would prescribe the qualifications of addition individual members who would be desirable. Actual Board Members could be proposed by the Center. The purpose of the Board is to ensure that a consensus is achieved, one that will be recognized by the Historic Preservation profession throughout the State and the Nation, on the academic and vocational/technical goals of the Restoration Arts program as well as the means and methods to realize them.

A Public Research University

New Jersey Institute of Technology
Center for Architecture and Building Science Research

The Development of a High School for the Preservation Arts
Fall 1999

Introduction

The threefold goal for the development of a High School for the Preservation Arts is:

- to create an holistic high school curriculum that integrates an interdisciplinary historic preservation-based curriculum with an artisan skills training curriculum and internship model that will meet the mandatory requirements of the New York State Board of Regents:
- to qualify students for admission to post secondary programs; and
- to provide them with the equivalent of a one-year preservation arts internship.

The curriculum is intended to enable students who graduate from the program to enter the workforce with an excellent academic background and earning potential, and the option to go on to post secondary education. Now completing its second year as a pilot program based at the High School for Arts and Business in Corona, Queens, the High School for the Preservation Arts project is seeking to develop a complete interdisciplinary core curriculum that integrates the studies of architecture and historic preservation into the History, English, Science, Mathematics, and Art curricula as well as artisan skills development curriculum.

The project is now poised to go to the next step in its development, from a pilot program to the development of a full curriculum in a designated high school in which the full preservation based curriculum and program will be developed.

The High School for the Preservation Arts project is a multi-year undertaking of the Center for Architecture and Building Science Research at New Jersey Institute of Technology (NJIT Center) and the New York City Board of Education. Other major participants are the World Monuments Fund (WMF), City Council Member Ken Fisher's Office, the National Center for Preservation Technology and Training of the National Park Service, the National Trust for Historic Preservation as well as many leading preservation organizations throughout the country.

Background: Recognizing a Need

The concept for a High School for the Preservation Arts is an outgrowth of the 1993 World Monuments Fund (WMF) symposium, "Employment Strategies for the Restoration Arts: Craft Training in the Service of Historic Preservation." The symposium highlighted:

- the absence of nationwide standards for the craft skills used in historic preservation:
- the limited number of existing US programs to train people in the highly specialized skills needed to maintain our rich architectural legacy;
- the demonstrated fact that preserving the historic fabric revitalizes communities:
- the increasing success of the preservation movement leading to greater numbers of designated historic districts:
- and the resulting need for skilled restoration artisans.

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A recent study by Rutgers University, *Economic Impacts of Historic Preservation* (funded by the U.S. Department of the Interior), relates that since the signing of the Historic Preservation Act in 1966, the number of sites on the National Historic Register has grown from one thousand entries to seventy thousand. The study also found that the national construction expenditure for rehabilitation totaled forty-four billion dollars in 1994. According the New York City Landmarks Preservation Commission figures, in 1999 there are 1,024 individually designated landmarks and 74 historic districts comprising over 21,500 brownstones, row houses and loft buildings in New York City. Many of these will need restoring in the future with few skilled crafts people to fill the anticipated need.

With this need in mind, New York City Council Member Ken Fisher envisioned the establishment of a high school dedicated to preservation training that would significantly benefit many New York inner city youth and help them meet the needs of society as well. The graduates from the High School for the Preservation Arts will provide an educated workforce with great local as well as national demand and they can expect to earn good starting pay with excellent earnings growth potential.

Background: Creating New Partnerships

The *Symposium* findings suggested that preservationists join forces with existing training programs, strengthen the socio-economic rationale in support of historic preservation, and raise public and political awareness about the value of historic preservation. The World Monuments Fund, acting on the directives of the meeting, enlisted Kate Burns Ottavino, Director of Preservation Technology for the New Jersey Institute of Technology's Center for Architecture and Building Science Research, to develop a *Sustainable Model for Restoration Arts Training.*

The *Symposium* also found that, while there have been numerous programs to train preservation artisans, most failed because the organizations sponsoring them were unable to incorporate the requisite academic education necessary for a complete understanding, appreciation and acquisition of the vocational skills. To give this program that essential foundation, the New York City Board of Education has committed its resources to the development of a preservation-based curriculum because it aptly perceived the subject of historic preservation as a real way of academically motivating vocational students. With NJIT Center as the project leader, the initial teacher and curriculum development is taking place at the pilot school, the High School for Arts and Business in Corona, Queens, NY, and the Board of Education is now considering designating a high school as the next step of development for the project.

Success to Date: A Brief History

The project was launched in the summer of 1997 with a Preservation Portfolio Internship Program (PPIP) followed in 1998 by the spring academic Preservation Week Program, the 1998 and 1999 summer PPIP's, the Fall 1999 Historic Preservation Workshop, and the development of a Historic Preservation Course elective to be taught in Spring 2000.

The 1997 PPIP was designed by the NJIT Center and arranged by the Youth Employment Services of New York City through the WMF and was sponsored by the Times Square Business Improvement Fund. Under the direction of conservator Kate Burns Ottavino, with the host artisan sponsor A. Ottavino Corporation, an eighty-five year old stone company, three students from the New York City High School of Graphic Arts participated in the restoration of statuary in the Times Square area. The PPIP '97 focused the students' efforts on the hands-on restoration work of the statuary while including the relevant academic components.

After the first successful effort, the NYC Board of Education then designated the newly formed High School for Arts and Business in Corona, Queens, NY, as the pilot school for the next phase of the project. In spring 1998, the NJIT Center and sponsor, the National Center for Preservation Technology and Training, conducted Preservation Week at the High School for Arts and Business. This consisted of three days of activities for thirty specially selected high school students. The program for the week included guest lecturers from the leading preservation organizations around the country and preservation-enriched interdisciplinary lessons prepared by four of the high school teachers (History, English, Science, and Art). Prior to Preservation Week, the four teachers participated in intensive teacher development sessions with the NJIT Center to gain a better understanding of the curriculum goals and to provide them with the necessary architecture and preservation information and related subject matter resources.

Preservation Week was followed by the PPIP '98. Through the summer, two student interns from the high school worked with host artisan sponsor A. Ottavino Corporation, this time at the Peristyle in Prospect Park, Brooklyn, NY, designed by Stanford White in 1904. The PPIP '98 included a teacher development component where the four high school teachers regularly went on-site to experience an actual restoration project as part of their developing integrated vocational and academic preservation-enriched lesson plans in their discipline.

Another dimension of summer 1998 was a French-American Teacher Exchange Program sponsored by the WMF which provided opportunities for NJIT Center representatives to visit craft training centers in France. In turn, a representative from the LaFondation de Coubertin in France observed the student interns at the site in Brooklyn.

The lesson plans developed by the four teachers as part of the PPIP in 1998 were revised using a Worlds Fair theme. They were taught in Fall 1999 at a one day Historic Preservation Workshop sponsored by the National Center for Preservation Technology and Training with pilot school students and teachers at the site of the Worlds Fairs in Flushing Queens. The event took place in the Queens Museum of Art New York City Building, that was used at both the 1939 and 1964 Worlds Fairs. The classes were video taped and evaluated by the NJIT Center curriculum assessment specialists to serve as models for further curriculum development.

The summer 1999 PPIP included a student intern from the pilot high school who worked at the A. Ottavino Corporation stone yards in Ozone Park, Queens, NY and at Chatham Square restoration in Lower Manhattan, NY, and with the WMF at the St. Ann's Center for the Arts, in Brooklyn. The PPIP '99 also included a teacher development component enabling a teacher from the high school to experience an artisan's atelier and an actual restoration project in order to incorporate aspects of these experiences into the ongoing development of lesson plans. As part of the vocational curriculum development, an ongoing French-American Teacher Exchange Program, sponsored by the WMF, allowed representatives to observe and assist in the development of student internship curriculum for the high school.

Through a National Endowment for the Humanities grant, the NJIT Center and pilot High School for Arts and Business are currently developing a one semester 12th grade interdisciplinary history course that will be taught in Spring 2000 at the High School for Arts and Business and will be a model of this preservation based approach.

Next Steps: Curriculum Development

The sponsors of the High School for the Preservation Arts project are currently seeking to fully develop the interdisciplinary historic preservation core curriculum for grades 9 through 12 in the History, English, Science, Mathematics, and Art, combined with an artisan skills training curriculum and internship component. As developed, the core curriculum will be field-tested in the classroom and evaluated. When approved, with its model internship program, the curriculum will serve the Preservation Arts High School program and will be a national model for similar efforts.

The foundation for the curriculum for each module is the New York City Board of Education's *Curriculum Frameworks* and *New Standards*. Students will be prepared to meet the high standards of the NYS Regents exams, and they will be provided with the equivalent of a one-year internship upon graduation so that they may either enter the workforce with demonstrable preservation-related skills in the restoration and building trades or go on to post-secondary education.

The curriculum is being constructed in such a way that it will allow students to experience history as a living dynamic by focusing on a specific historic structure or artifact through which to study the forces of its creation, preservation and interpretation. These significant historic buildings or artifacts serve as the keystone for the study of all aspects of a particular period and place. Using this model, the teachers can work together using a common architectural theme as an expression of the period under study through which they can integrate their respective disciplines. For instance, the teachers can apply the selected theme by examining the physical setting of the structure, the living patterns of the time and the social/civic context of the structure; the philosophies of the times and how they shaped the structures studied; the influential events taking place at the time such as wars, depressions, migration, immigration; scientific, mathematical and technological changes; the culture, music and arts; the government, politics and institutions; as well as the economics and modes of education of the period.

The effectiveness of this model for interdisciplinary teaching was tested during the spring and summer of 1998. Students and teachers studied Stanford White's classical Peristyle structure designed in 1904 for Brooklyn's Prospect Park. The English teacher selected the poem, "Patterns" by Amy Lowell to stimulate discussion of form and structure as methods of social control and the resulting impact such controls can have on individuals' private lives. The Art teacher used the Peristyle to show students how classical forms have evolved from ancient times and become abstracted into today's graphic arts. The History teacher created group exercises to show how buildings can be dated using photographic clues, and how memory is used to develop a sense of social connectedness through personal history. In Science the teacher used the materials of the Peristyle to illustrate, by class experiment, the chemistry of removing paint from terra cotta. In developing this model, educators are generating a methodology for organizing a consistent body of knowledge using a comprehensive historic preservation-based learning approach that will help students become aware of how different humanities and other academic disciplines are integral to one another and how they are incorporated into their workplace activities.

School to Work National ReformTrend

The objectives of the High School for the Preservation Arts project are consistent with current national vocational trends in education. The national "School to Work" initiative, enacted by the U.S. Congress in 1994, mandates a renewal of vocational education in the public school

system. The initiative encourages education that unifies the academic with vocational training in the schools and directs this learning to relevant work place experience. The program also falls within the *Goals 2000: Educate America Act* that calls for the reformation of the vocational education system in America because this system no longer provides either relevant academic or vocational training, nor does it emphasize the need for an accountable and collaborative approach to education

The High School for the Preservation Arts project is also in accord with the NYC Board of Education's initiative to restructure vocational high schools that is a part of the reform movement in the public school system. This performance driven system is aimed at promoting high student achievement using as the foundation the NYC Board of Education *New Standards*. These *New Standards* set goals for high achievement for all students in order for vocational students, in particular, to be properly equipped to enter the workforce. In line with this, the NJIT Center is using these *New Standards* and *Curriculum Frameworks* as the foundation for the preservation-infused curriculum model being developed for this project.

The NYC Board of Education states that fostering "a successful transition from school to work" is of the highest priority for the vocational reform movement. The NJIT Center is in complete agreement with this premise and is thus seeking to organize a consistent body of knowledge through an holistic balanced educational approach. Such an approach will allow the students to learn that the relationship between their academic studies and their vocational pursuits will enhance their personal growth and increase their earning power when they enter the workforce.

Conclusion

Students who graduate from the High School for the Preservation Arts may contribute to the support of the preservation community in a variety of roles. Some may go on to higher education and become architects, contractors, preservationists, civil engineers, or have other related preservation careers. A number may go on and have professional careers in entirely different areas while keeping an appreciation and interest in preservation for themselves and in their community. Others may carry through and become preservation craftspeople who find that there is a great demand for skilled preservation artisans in the building and construction industry. In this way, the High School for the Preservation Arts will meet the needs of society on numerous levels:

- One, many students who might otherwise be marginalized in a high-tech world will be educated academically and through artisan skills training and internships into the growing field of the preservation arts.
- Two, the training of artisans will create a work force that will allow the building industry to renew and preserve the infrastructures of our communities and regions.
- Three, students who meet the academic requirements may choose to continue onto higher education.
- Four, the quality of life within our communities will be improved by the increased citizen awareness of the value socially and economically of preserving of our cultural heritage.

In sum, the students who graduate from the High School for the Preservation Arts will be able to enter the workforce with a high quality academic education, the equivalent of a one-year internship experience and the potential for a good salary. They may choose to go on to post-secondary education, or work in related fields having gained an appreciation of the value of historic preservation that they can apply in their own communities. For those who work in the

preservation fields, the synergy between the academic and the vocational aspects of their pursuits will afford them greater satisfaction in their lives and their work as well. Once developed, tested, assessed and approved, this model can also be used as a curriculum, hands-on model for other vocational programs as well as a model for preservation arts high schools across the nation.

Funding for the High School for the Preservation Arts Project

The NJIT Center and the NYC Board of Education are currently seeking substantial funding from outside sources for curriculum and internship development for the High School for the Preservation Arts project. These funds will be used for the development, testing, evaluation and approval of a comprehensive interdisciplinary historic preservation core curriculum for grades 9 through 12 in subject areas of History, English, Science, Mathematics, Art and an integral preservation skills training and internship component.

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Preservation Portfolio Internship Program (PPIP)

July 13-August 28, 1998

Monday through Friday, 9:00 a.m. - 3:00 p.m.

Revised 7/15/98

Sites: (Brooklyn Prospect Park Peristyle unless rain or otherwise noted)

1. Brooklyn Prospect Park Peristyle
2. A. Ottavino Corporation Shop (Rainy days) - 80-60 Pitkin Avenue, Ozone Park NY
3. Field Trips - see schedule below

Field Trip Schedule

July 13 (Monday)	9:00 a.m.	Brooklyn Prospect Park Peristyle (each day except rain or as noted)
July 13 (Monday)	1:00 p.m.	- Tour of Park with Center staff
July 14 (Tuesday)	1:00 p.m.	- Visit Prospect Park Alliance, 95 Prospect Park West Contact: Ralph Carmosino, Architect Tel: (718) 965-6525
July 15 (Wednesday) **CANCELLED**	1:00 p.m.	Visit to A. Ottavino Corporation, **(Cancelled on this day: RESCHEDULED on July 28)**
July 16 (Thursday) **NEW**	**12:00 noon**	**L. Aron. , B.Serra meet with Kate to discuss lesson plans (Meet At Peristyle)**
	1:00 p.m.	Visit Prospect Park Alliance Archives, 95 Prospect Park West (Meet at Peristyle) Contact: Jeannine St. Germaine, Archivist Tel: (718) 965-6503
July 23 (Thursday)	**12:30 p.m.**	K. Lawlor visit A. Ottavino Shop. Meet with Kate to discuss lesson plans
July 27 (Monday) **N.B.**	**NEW TIME** **9:00 a.m.**	**Tour of Central Park with Center Staff (Meet at 59th St. and 5th Ave. - By Statue of General Sherman at Entrance**
	1:00 p.m.	Visit New York Historical Society, 170 Central Park West Contact: Marybeth Betts, Curator Tel: (212) 873 3400 Ext. 273/Fax: 212 875-1673

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July 28 (Tuesday)

N.B. **NEW** **9:00 a.m.** **RESCHEDULED VISIT TO:**
Ottavino Corporation, A. George Ottavino, Host Artisan Sponsor, 80-60 Pitkins Avenue, Ozone Park, NY
Tel: (718) 848-9404 (Meet at Shop)

1:00 p.m. Visit the Art Commission, NYC City Hall
Contact: Lynn Bodner, Assistant Director
Tel: (212) 788-3071

Followed by Tour of the Civic Center with Center staff

August 3-5 (Mon-Wed) Visit to site: Fondation Coubertin representative, M. Jusselme,

August 6 (Thursday) **3:00 p.m.** Round Table Discussion at the
Landmarks Preservation Commission, 100 Old Slip, NYC.
Tel: (212) 487-6800
CABSR and World Monuments Fund: Presentation of findings and discussion of the future of a French-American Artisan Training Exchange Program

August 7 (Friday) **11:30 a.m.** Visit Brooklyn Public Library, Grand Army Plaza
Contact: Julie Moffat, Librarian
Tel: (718) 230-2708

Other Trips to be Arranged:

August 3 4 5 TBA - Visit to Municipal Archives, 31 Chambers Street, NYC
Contact: Leonora Gidlind, Archivist
Tel: (212) 788-8629

August TBA - Visit to Brooklyn Historical Society*, 128 Pierrepont St.
Contact: Michele Hackwelder, Archivist
Tel: (718) 624-0890

NJIT/CABSR PRESERVATION PORTFOLIO INTERNSHIP PROGRAM
French American Exchange Program with WMF

Schedule for M. Jean-Paul Jusselme, Director of the Fondation Coubertin - August 3-7, 1998

Translator - Anne-Sophie Roure

Sunday, August 2

Arrive 8:50 P.M. Kate Burns Ottavino: Meet M. Jusselme, Kennedy Airport/Air France (Flight No.008)
Take to Marriott Hotel, Adams Street, Brooklyn

Monday, August 3

10:00 A.M. Kate - Meet M. Jusselme and Ann Sophie at Marriott Hotel
10:15 A.M. Visit A. Ottavino shop with student interns: Filipe Gibaldo and Justin Hilliard
See videos on Brooklyn Borough Hall and Duffy Square
Visit Peristyle
4:00 Visit World Monuments Fund

Tuesday, August 4

8:45 A.M. Kate - Meet M. Jusselme and Ann Sophie at Marriott Hotel
Visit Peristyle - Meet with teachers, Lynda Aron, English and Bryan Serra , Art, and student interns
12:00 P.M.-Noon: Eye Witness News visit to Peristyle (on at 5:40 p.m.)
Visit Washington Square Arch - A. Ottavino Restoration

Wednesday, August 5

8:45 A.M. Kate Pick up M. Jusselme and Ann Sophie at Marriott Hotel
9 A.M. Pick up students and Visit Brooklyn Borough Hall
Visit Cloisters, Fort Tryon Park - A. Ottavino restoration site
Visit Metropolitan Museum Art, Temple of Dendur, A. Ottavino restoration
Visit Whitney Museum - A. Ottavino Restoration

Thursday, August 6

8:45 A.M. Kate Pick up M. Jusselme and Ann Sophie at Marriott Hotel
Visit Peristyle
11:00 A.M. Visit French Embassy/ Venetian Room. 79th and Fifth/ designed by Stanford White/restoration by Waite Assoc.
1:00 p.m. Lunch with NYCBOE (Dr. Peter Kaufman, Dir.,NYCBOE Careers and Occupational Educ)
Sequoia Restaurant, South Street Seaport

3:00 P.M. **Round Table Discussion** at Landmarks Preservation Commission, 100 Old Slip

Friday, August 7

6:00 a.m. . Kate pick up students at office
6:30 a.m. Pick up M. Jusselme and Ann Sophie at Marriott Hotel
7:15 a.m. Visit Statue of Liberty
11:30 A.M. Visit Brooklyn Public Library (Julie Moffat, Librarian)
1:00 p.m. Visit St. Ann's
3:15 p.m. Visit Ellis Island

Close of Official Visit

Rev 8/5/98

New Jersey Institute of Technology

CENTER FOR ARCHITECTURE AND BUILDING SCIENCE RESEARCH

APPENDIX 2B

A Public
Research University

NJIT CENTER FOR ARCHITECTURE AND BUILDING SCIENCE RESEARCH AND HIGH SCHOOL FOR ARTS AND BUSINESS FACULTY

PLANNING WORKSHOP, JUNE 23, 1998 FOR Summer Preservation Portfolio Internship Project (PPIP)

OVERVIEW

The 1998 Summer PPIP will engage three students from the High School for Arts and Business (HSAB) in Corona Queens. The student interns will receive ~~eight~~ seven weeks of restoration training at the Prospect Park Peristyle in Brooklyn, New York. The internship will combine hands-on practical training as well as site-specific learning exercises that will relate to the historical and scientific knowledge that underlie and give meaning to preservation work. The students will receive course credit towards their high school diploma through the summer division of the New York City Board of Education.

The 1998 program will build on the 1997 PPIP by adding several elements. In addition to training student interns, this year's program is designed to allow four teachers who participated in Preservation Week (English, History, Science, and Art) to participate in the on-site aspects of an actual restoration project. This on-site experience will be supplemented through off site archival and city agency research to demonstrate and engage the teachers in the academic components of preservation and how they are applied onsite. This shared learning experience with the student interns is designed to develop the teacher's ability to enrich their academic curriculum with preservation points of reference and examples.

In preparation for the 1998 PPIP the following selections have been made:

Site Selection
The Prospect Park Peristyle, McKim, Mead and White, 1904 has been designated as the 1998 Preservation Portfolio Internship Project (PPIP) Site where the teachers will observe/participate and the students will work with the artisans from the A. Ottavino Corporation under the guidance and supervision of conservator Kate Burns Ottavino, Vice President of Ottavino Corporation and Director of Preservation Technology, NJIT/CABSR.

Student Intern Selection
Out of the 31 students who attended Preservation Week, three (3) students have been selected to participate in the 1998 internship program.

Teacher Selection
The four teachers who participated in Preservation Week, May 1998 will participate in the teacher development component of this project over the summer of 1998. They are: Lynda Aron, English; Kevin Lawlor, Social Studies; Bryan Serra, Art; and Kieran McGuire, Science. [They will be paid by the New York Board of Education]

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PROJECT OBJECTIVES and TASKS

Phase I. Education and Training

The summer 1998 Preservation Portfolio Internship Project (PPIP) will directly involve students and teachers in a significant restoration project (Prospect Park Peristyle) giving them an appreciation of the high degree of skill and artistry involved in historic construction methods and the standards of excellence achievable by current restoration technology. The students and teachers will acquire some rudimentary restoration skills as well as an understanding of the methodology employed in the planning and execution of such work. The students' academic preparation during Preservation Week in May and the site-based learning exercises are intended to reinforce an appreciation and understanding of preservation methodology by connecting the restoration work to its historic, cultural and scientific context.

Teacher development will consist of the teachers sharing the restoration experience and using this experience to explore ways in which the internship process is informed by and can be used as a vehicle for an in-depth, interdisciplinary teaching and learning process. Then the teachers will develop course materials, learning exercises and lesson plans over the course of the eight weeks. (See attached "Overview of Teacher Involvement" and "Summer Internship Schedule.") In addition to the on-site experiences, students and teachers will visit institutions and agencies such as the New York Public Library, Municipal Archives, Prospect Park Alliance, New York Historical Society, and the Queen's Museum to study the model of the City of New York. They will also visit to compare and contrast the design and evolution of Central Park, Prospect Park and Riverside Park (all designed by Vaux and Olmstead)

Tasks:

A. Workshop at the start of the project with NJIT CABSR Staff (June 23, 1998), and four teachers from HSAB to review the outline of PPIP objectives, confirm schedules and coordinate field trips

B. Teacher Development - The four teachers will devote 10 hours per week for 8 weeks. Included will be on site participation and field trips to agencies and other resource institutions. During the course of the summer they will produce a series of lesson plans incorporating their experiences on site with the students and their field trips to support a preservation-enriched academic classroom education. The four lesson plans per subject area are intended to build in complexity over a four-year academic course of study

C. Student Training - Student introduction to the site and work at Peristyle including work at the artisan shop. The PPIP is organized around 8 weeks, 6 hours per day with the exception of visits to city agencies and other municipal resources

D. Field Trips to Municipal Archives, New York Public Library, Prospect Park Alliance, as well as to NYC Central Park and Riverside Park to compare and contrast with Prospect Park (all three parks were designed by Vaux and Olmstead)

E. Students will be trained to videotape sample work in progress and field trip experiences. A video will be produced at the end of the project period.

Phase II. Documentation, Evaluation and Dissemination.

The summer internship program is a pilot program designed to allow the teachers to experience the on-site aspect of an actual restoration project. This on-site experience can then be used during the academic year to support the preservation-enriched academic classroom education. It is anticipated that the academic course exercises will reflect the needs of restoration education combined with New York Regents examination standards. The teachers will document this through the preparation of lesson plans and exercises by the end of summer.

The students will videotape examples of student training experiences throughout the summer. Videotape will be produced at the end of summer. The program will be assessed by NJIT's Chair of the Department of Humanities and Social Science throughout the project. Once the final report is written and the teacher course materials are prepared, NJIT/CABSR will disseminate this information in report format on the World Wide Web at NJIT's CABSR address.

In order to make the 1998 PPIP a prototypical model, it is anticipated that the products will be produced and widely disseminated by the end of the summer program.

Tasks

A. **Documentation.** Documentation of the project will take place throughout the summer with written and pictorial documentation of the project. A final report will include the teacher four lesson plans from each discipline (collectively a total of sixteen classroom exercises that will focus on restoration objectives); the project assessment standards and outcomes; and a video that will be produced.

B. **Evaluation.** There will be a formal assessment of the project by Norbert Elliot, chair of the NJIT Department of Humanities and Social Science. He (or his representative) will meet with and interview the student interns and teachers at the start of the project, in the middle and at its conclusion. He will then prepare a written report evaluating the learning experience, based upon academically accepted assessment criteria.

C. **Dissemination.** The final report will be widely disseminated and placed on the NJIT CABSR Website

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SUMMER INTERNSHIP SCHEDULE

WEEK 1:
-Teacher review outline materials and technical diagrams
-Teachers to visit site and shop
-Student introduction to site and shop
-Teachers to brainstorm around table with NJIT how they would see this site opportunity becoming an exercise incorporating academic products

WEEK 2:
-Teachers to visit the work in progress and observe early student participation for later comparison on student progress

-Students from this week onward work with the A. Ottavino Corporation at the Peristyle site or at the Ottavino Corporation shop. Visits to agencies and other resource institutions

-Student video content defined

WEEKS 3-7:
-Teachers and students visits to the following institutions and agencies: the New York Public Library, Municipal Archives Prospect Park Alliance, New York Historical Society, Queen's Museum to study model of New York City

-Visits to and comparison of three major NYC parks designed by Vaux and Olmstead: Central Park, Prospect Park, and Riverside Park

-Student site instruction, participation, and on-going documentation

WEEK 8:
-Teacher and student assessments
Lesson plan review
Recap
CABSR report

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SUMMER INTERNSHIP PROJECT
OVERVIEW OF TEACHER INVOLVEMENT

Purpose of the Teacher Involvement

The Summer Internship program is designed to allow the teachers to experience the on-site aspect of an actual restoration project. This on-site experience is expected to be used during the academic year to support preservation-enriched academic classroom education. It is anticipated that the academic course exercises will reflect the needs of restoration education for the following items:

Critical thinking processes and analytical skills
Primary and secondary research methodologies
Documentation
Scientific analysis
Historic analysis
Artistic appreciation
Prescriptive writing skills
Communication skills including vocabulary

Summer Project Products

The summer project this year is to produce four lesson plans within each discipline that that will span the four-year curriculum indicating the different subject matter to be taught and its increasing level of difficulty. The four teachers will collectively produce a total of sixteen classroom exercises that will focus incorporating and developing the knowledge and skills previously outlined above by building upon the summer experience of the Peristyle restoration.

Interdependence of the summer and Academic Year Programs

The reciprocal framework of a preservation-enriched program uses the academic fall and spring semesters to develop the intellectual abilities and appreciation of the students in their selected field; enables the students to implement the hands-on practical field practice of preservation

The objective of preservation-enriched academic lessons and assignments during the academic year is the preparation of the intellectual and artistic appreciation of the Preservation internship. Each successive internship builds on and refines the prior internship and academic year's experience. The progressive goal is the continual improvement in the quality and level of preparation that the interns will have at the beginning of each internship in the intellectual, manual and artistic skills that they individually possess in their selected area of concentration (stone, wood, clay ...). At the end of the four-year curriculum the students will have received a Regents diploma high school education with a one-year internship, gained by the collective eight-month internships that they have earned by the internship experience.

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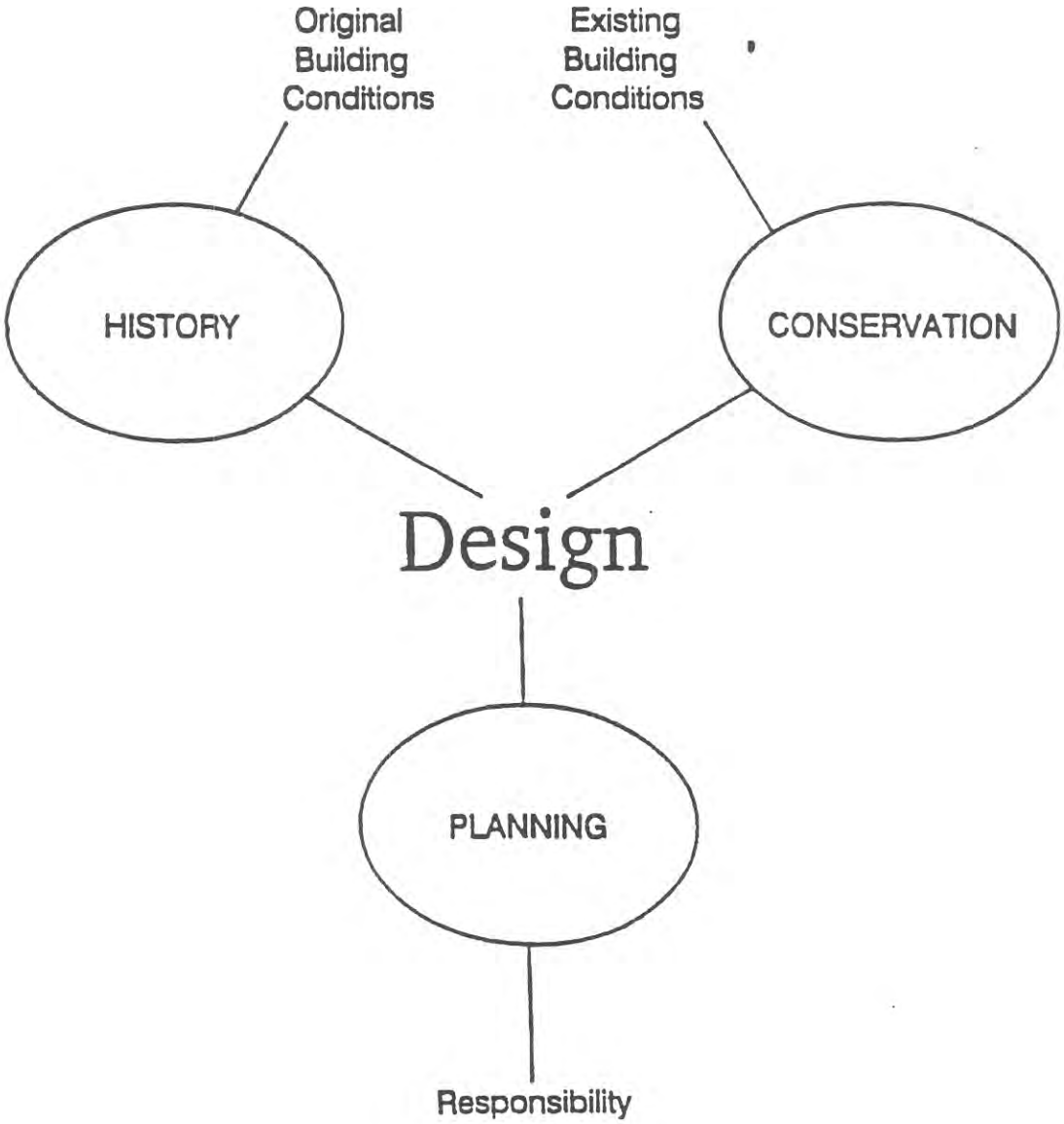

Technical Preservation: A Diagram

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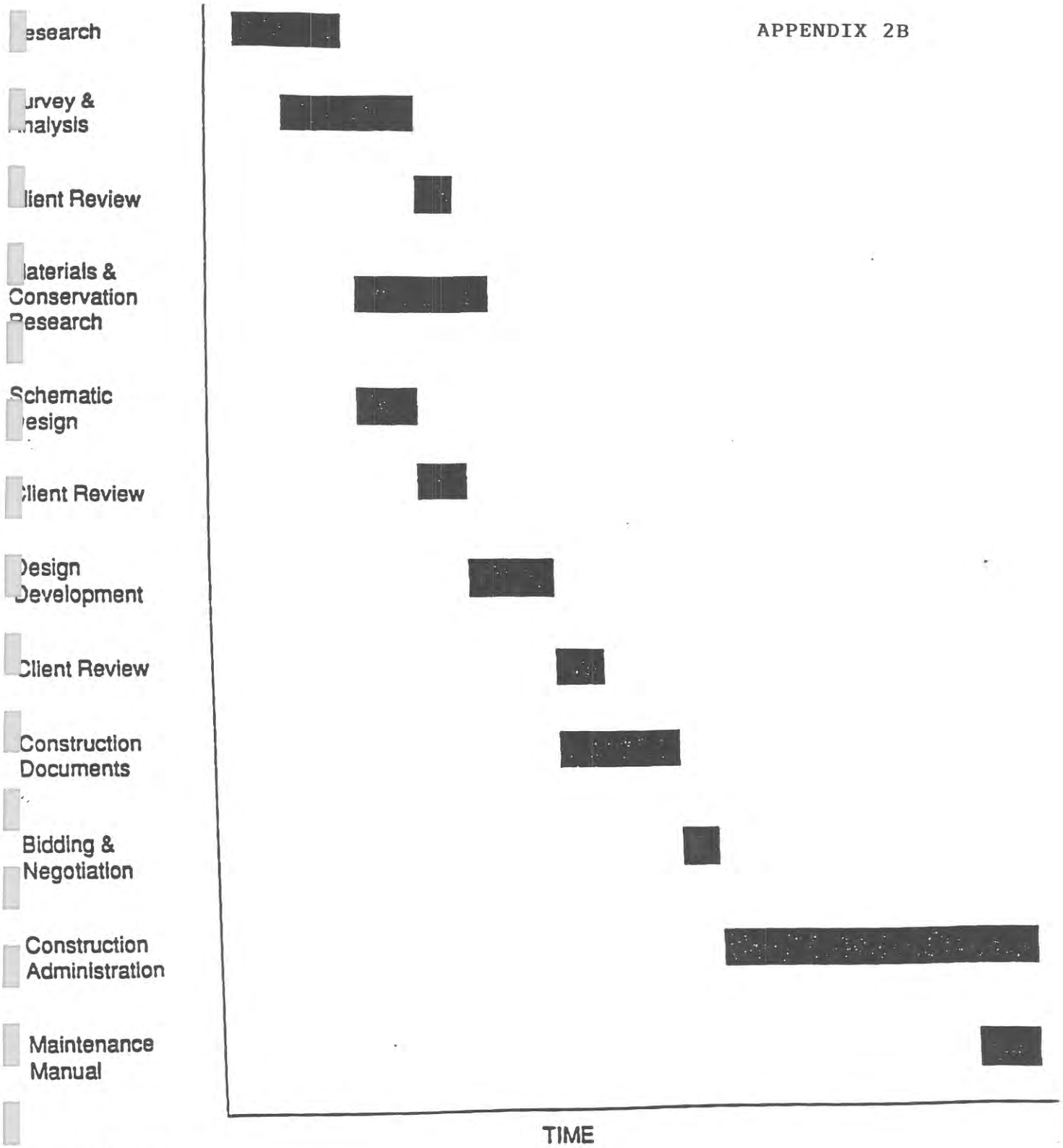

Design Technical Preservation: A Diagram

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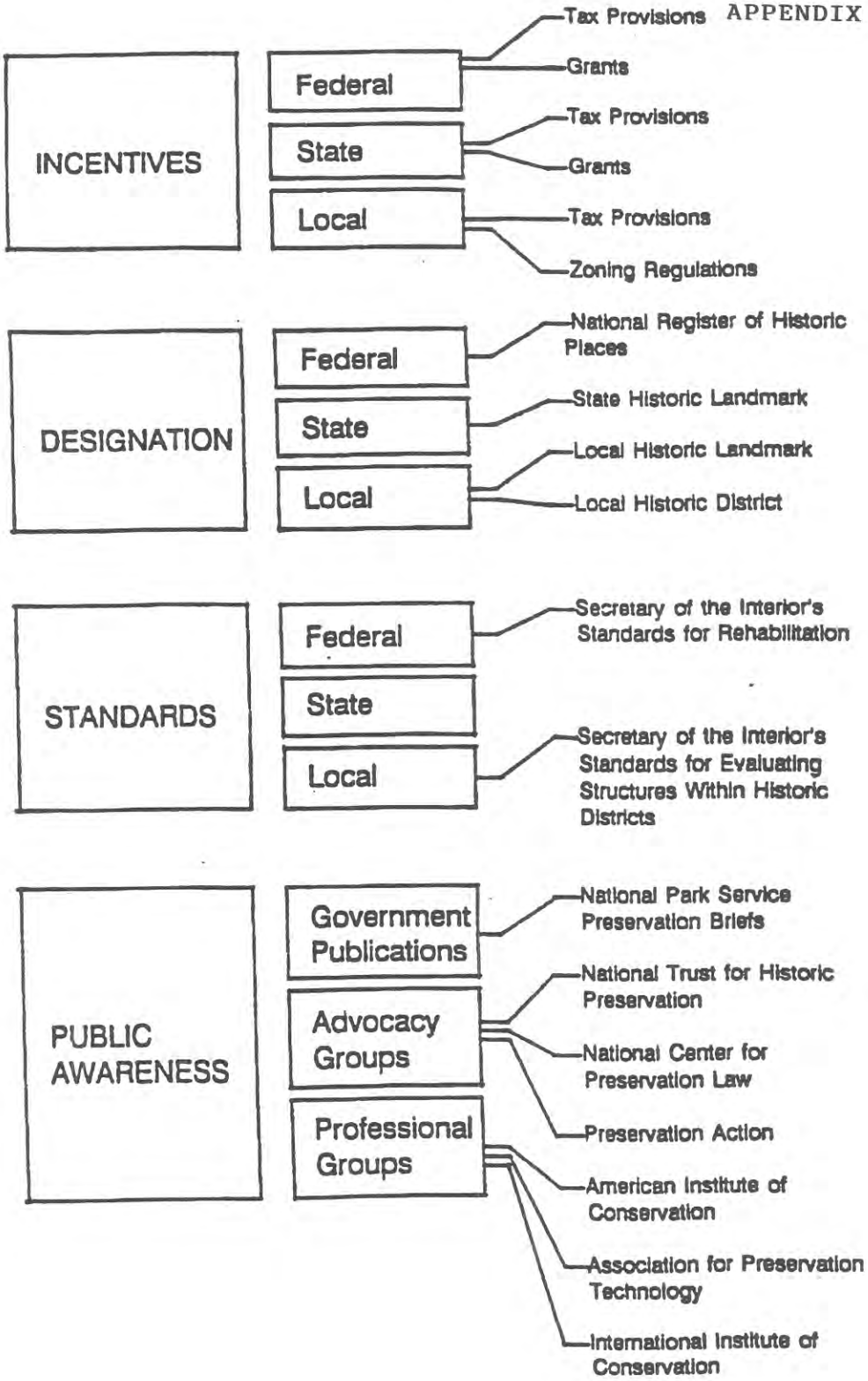
Planning



Technical Preservation: A Diagram

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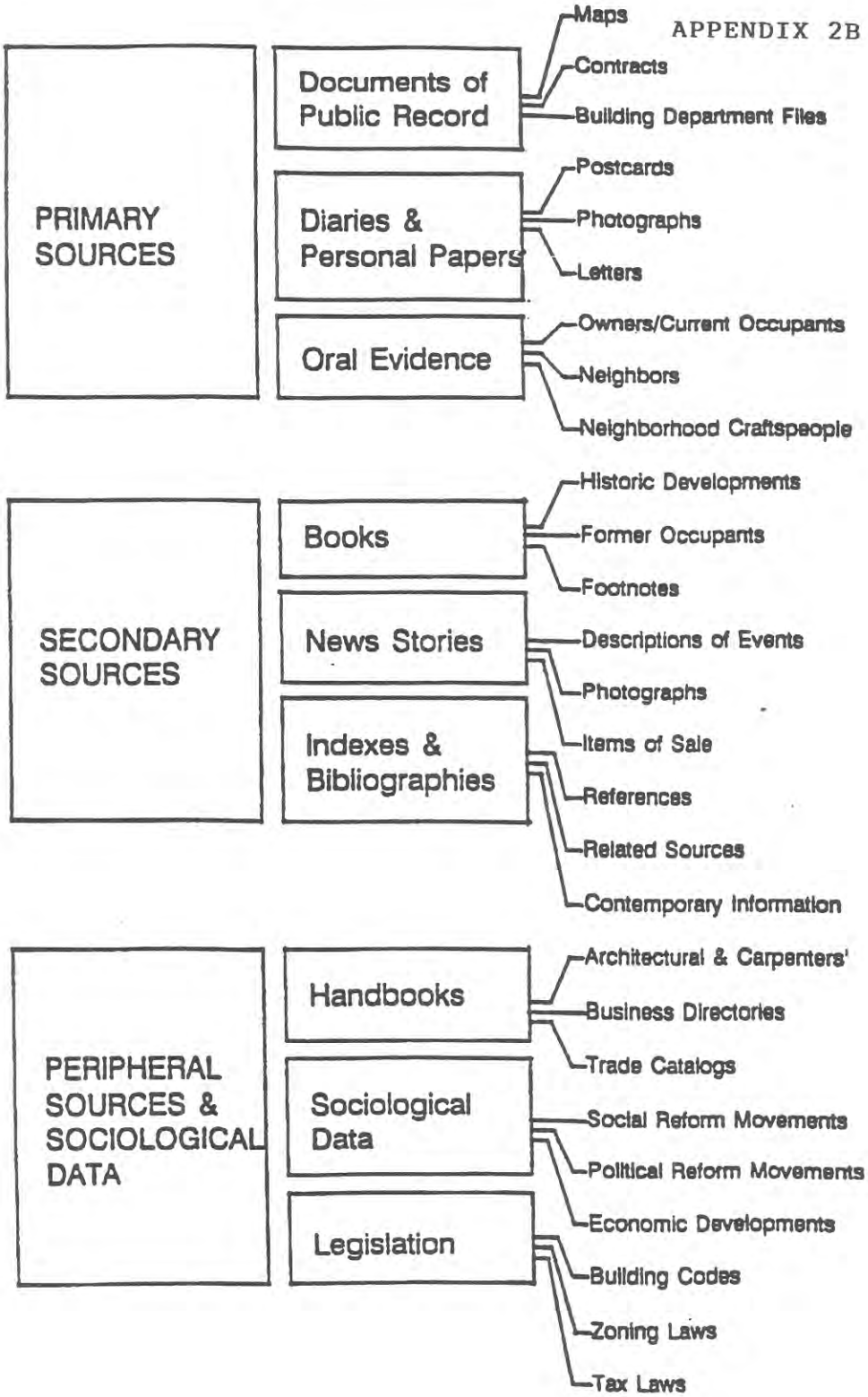

Iistory

pted from The Restoration Manual
Orin M. Bullock, 1966.

Technical Preservation: A Diagram

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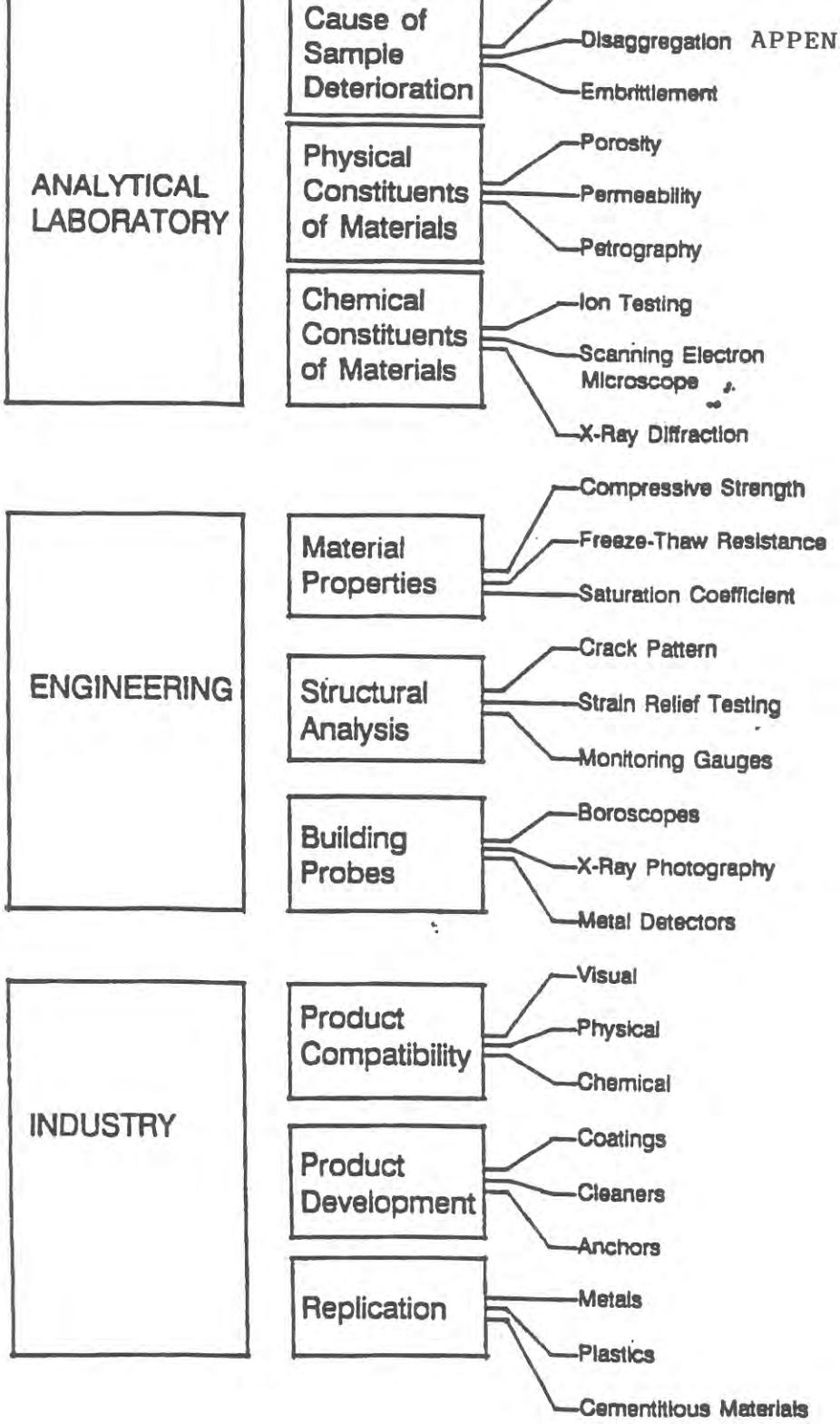
Conservation



Technical Preservation: A Diagram

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CENTER FOR ARCHITECTURE AND
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HIGH SCHOOL OF ARTS AND BUSINESS
AGENDA
JUNE 23 1998
PRESERVATION PORTFOLIO INTERNSHIP PROJECT (PPIP)
SUMMER '98

I. Review goals of the field aspects of the internship program for 1998

A. Students
1. Exposure to site work
2. Introduction to preservation in the field
3. Review Frederic Orozco's response to PPIP'97

B. Teachers

1. Exposure to historic preservation in practice
2. Correlation between Preservation Week in school and the PPIP
3. Identify teaching opportunities in the field
4. Identify field experiences that can be incorporated into the classroom experience

II. Review products to be produced during PPIP'98

A. Students
1. Report on the Peristyle including its history and current restoration
   A. See George M. Cohan report prepared by High School of Graphic Arts students during PPIP'97

2. Questionnaire response to the PPIP'98 experience
   A. See Orozco response to PPIP'97 (I.A.3. above)

B. Teachers
1. Evaluation of the student experience
2. Evaluation of the teacher experience
3. Four (4) master lesson plans placed contextually into one semester of course work for each academic year including grades 9 - 12
   A. Resources to be applied and referenced
      a. Bd. of Ed. "Curriculum Frameworks"
      b. Nat'l Trust "Teaching with Historic Places - A Curriculum Framework"
      c. Historic Districts Council "The Community as Classroom -

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A Teachers Manual"

d. NJIT Preservation Week Class Content and Teacher Development Packets - Issued March 1998

E. Brian Serra - Architectural Preservation: Curriculum Construction & Planning for Secondary Education

B. Model Products

1. "The Communities as Classroom" sample lesson plans and resource references
2. Brian Serra - Curriculum Construction & Planning for overview and "Curriculum Frameworks" integration

III. Time Frames

A. Students

1. Monday through Friday 9:00 am to 3:00 pm — July 13 - Aug 28

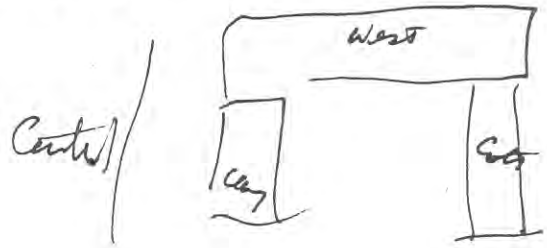
B. Teachers

1. To be discussed
2. Allocated hours 80 per teacher
3. Time from this summer allocated to put Preservation Week lessons (2 per teacher per subject area) into HDC Community as Classroom format including resource references/bibliography.
4. Discussion of schedule of site and resource visits
5. Requisite time to follow through on items in II. above.

IV. Site and Resource visits

A. Vaux and Olmsted parks - Prospect and Central Park (KL) Jump
   1. Optional Riverside Park
B. Prospect Parks Alliance Headquarters and Archives in Prospect Park (can arrange anytime) KL
C. New York Historical Society - Stanford White archives CPW (KL) Jump
D. Art Commission – City Hall
E. Brooklyn Historical society – Brooklyn Heights Historic district – Monegual St
F. Brooklyn Public Library –
G. Peristyle on going – Prospect Park [Pratt Library (1840?) - Oldest]
H. A. Ottavino Corporation shop – Ozone Park : Start up Intro days
~~I. The Mount~~
Lenox, Mass

Cloisters (Kiernan thinks would be gd)



Soldiers' and Sailors' Memorial Arch

Lefferts Homestead

PROSPECT PARK
Brooklyn

Prospect Park, design begun, 1865; construction begun 1866
Bounded by Prospect Park West, Bartel-Pritchard Circle roadway, Prospect Park Southwest, Park Circle roadway, Parkside Avenue, Ocean Avenue, Flatbush Avenue, and Grand Army Plaza roadway
Architects: Frederick Law Olmsted and Calvert Vaux
Designated: November 25, 1975

Lefferts Homestead, 1777–83, moved 1918
Prospect Park (Flatbush Avenue at Empire Boulevard)
Architect: Unknown
Designated: June 21, 1966

Litchfield Villa, completed 1856
Prospect Park (Prospect Park West at 5th Street)
Architect: Alexander Jackson Davis
Designated: March 15, 1966

Soldiers' and Sailors' Memorial Arch, 1889–92
Grand Army Plaza
Architect: John H. Duncan
Designated: October 16, 1973

Grecian Shelter, completed 1905
Prospect Park (near Parkside Avenue)
Architects: McKim, Mead & White
Designated: December 10, 1968

Boathouse, 1904
Prospect Park (on the Lullwater)
Architects: Helmle & Huberty
Designated: October 14, 1968

rooklyn's Prospect Park, 526 acres of picturesque landscape dotted by flower gardens, ndering pathways, and historic buildings, is one of the largest and most scenic urban parks e United States. It was designed, starting in 1865, by Frederick Law Olmsted and Calvert aux, the landscape architects who had earlier been responsible for Central Park in Manhattan, n in 1857. Like Central Park, Prospect Park offered the urban dweller a pastoral escape the congestion of city life. As Egbert L. Viele, chief topographical engineer of the project, marked: "The primary object of the park [is] as a rural resort where the people of all classes, ping from the glare and glitter, and turmoil of the city, might find relief for the mind, and sical recreation."

Construction of the park began in 1866, although planning by the city's commissioners had n initiated as early as 1859, when an act was passed authorizing the selection and location of park grounds. The outbreak of the Civil War in 1861 delayed any further work until 1865, hen Vaux, later to be joined by Olmsted, was appointed. Their plan, based on the popular lish-garden mode, called for three very distinct regions: a large open meadow, a hilly wooded planted with an extensive variety of native and exotic plants and trees, and a vast lake istrict. A traffic circulation system like that used in Central Park artfully segregated vehicles, estrians, and equestrian traffic; the flow of roads and paths connected these regions without urbing the natural scenery.

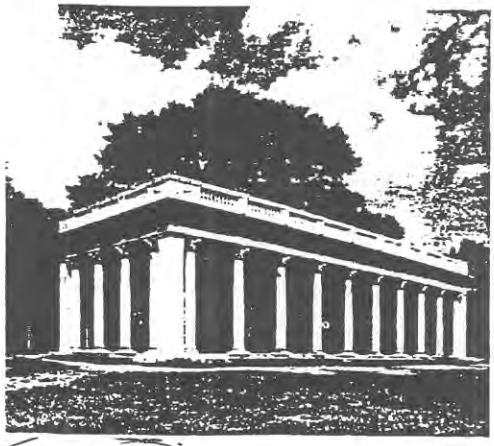
In addition to the park's natural landscape, Olmsted and Vaux designed a number of formal ces, including the Concert Grove, now referred to as the Flower Garden, and the great otical Plaza, renamed the Grand Army Plaza, at the main entrance to the park. Dominating he plaza is the monumental Neoclassical Soldiers' and Sailors' Memorial Arch; built in 1889–92 John H. Duncan (who was also responsible for Grant's Tomb on Riverside Drive), it is icated to the men who fought in the Union forces during the Civil War.

Olmsted and Vaux felt that any buildings within the park should be subordinated to the natural ing. Many structures built in the nineteenth century were—they provided rustic architecture eeping with the rural environment. A number of structures dating from the early twentieth entury, however, were products of a renewed interest in classicism and tend to dominate the dscape. The Boathouse, designed by Helmle & Huberty and completed in 1904, is a graceful -story terra-cotta building recalling Sansovino's magnificent (and very urban) library in enice. The firm of McKim, Mead & White designed the Grecian Shelter, which was completed 1905. Like the Boathouse, it is a masterpiece of Neoclassical inspiration. The flowing rhythm ts twenty-eight Corinthian columns, topped by a balustraded terra-cotta entablature, evokes oetic associations of the Greek temple and the grandeur of classical antiquity.

There are two historic residential buildings located in the park. The Lefferts Homestead, built ween 1777 and 1783 (architect unknown) and moved down Flatbush Avenue to Prospect Park n 1918, is a charming Dutch Colonial farmhouse with a low-pitched roof, arched dormer ndows, and a colonnaded porch. The Litchfield Villa, already contained within the precincts he park, was completed in 1856 after a design by Alexander Jackson Davis. It is one of the inest extant imitations of a romantic Italian villa, with its irregular towers, arched doorways and ndows, and balustrades.

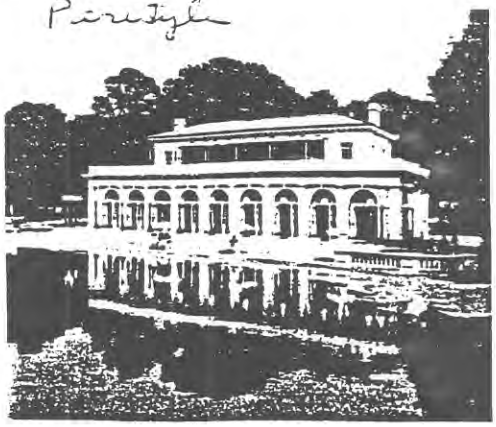
Since its beginning, Prospect Park has been the prime recreational site of Brooklyn and its most notable green space. Enjoyed by millions of city residents and visitors each year, the park ntinues to provide a much-needed respite from the brick and concrete of the urban vironment.

Litchfield Villa



Grecian Shelter

Peristyle



Boathouse

BROOKLYN

PPIP July 13-August 28, 1998
Monday through Friday
9:00 a.m. - 3:00 p.m.

Sites (Each day at the (1) The Peristyle;
(2) A. Ottavino Corp. Shop
if it **rains** or (3) Field trips as listed on the schedule

(1) The Prospect Park Peristyle (also known as the Grecian or Croquet Shelter) Brooklyn NY (see map)
July 13 - August 28, 9 a.m. to 3 p.m. Every day
(unless it rains then go to A. Ottavino Corp shop)
By public transportation take **the subway:**
D train to Ocean Avenue and Parkside Avenue and then walk two blocks

(2) A. Ottavino Corporation Shop (Rainy days)
80-60 Pitkin Avenue, Ozone Park, NY
Contact: Ms. Ottavino: Tel: (718) 848-9404
Take the subway: **A train to 80th Street - Hudson stop**
and walk three blocks to 80-60 Pitkin Avenue

APPENDIX 2B

HPS Historic Preservation Services

Historic Preservation Planning PROGRAM

National Park Service

"Planning for the Future of Our Heritage"

American Battlefields

Historic Buildings

Historic Landmarks

Historic Landscapes

Tribal Communities

- Welcome
- What We Do
- Search
- E-Mail

WHAT IS HISTORIC PRESERVATION PLANNING?

Except for its subject matter, historic preservation planning is really no different than any other kind of planning. It is a rational, systematic process of gathering and analyzing information, and projecting preservation action into the future. Effective historic preservation planning empowers informed decision-making, rather than crisis-reaction, which results in enhanced preservation of historic and cultural resources. The primary purpose of historic preservation planning is to ensure the protection and preservation of valued historic and cultural resources for future generations. Whether carried out at the federal, state, tribal, or local level, historic preservation planning is based on a careful identification and assessment of historic and cultural resources within the context of other public policy goals. Historic preservation planning builds a consensus toward a shared vision of the preservation future and establishes a course of action to ensure future preservation of valued historic and cultural resources

The historic preservation plan (or cultural resource management plan, as it is sometimes called) documents the results of planning and looks toward the future while guiding decisions made and actions taken today. To be fully effective, the plan cannot gather dust on a shelf somewhere; it must be implemented-- actions must be taken by a variety of players to make sure that the plan's goals can be achieved so that the shared vision of the preservation future can be reached.

WHO WE ARE

The Historic Preservation Planning Program of the National Park Service develops national policy related to historic preservation planning and carries out activities in two major areas:

1. Oversight and administration of the statewide historic preservation planning component of State Historic Preservation Office (SHPO) federal Historic Preservation Fund programs; and
2. Development and delivery of technical assistance and guidance in historic preservation planning to a broad audience, including SHPOs, federal agencies, tribes, and local communities.

The goals of the Historic Preservation Planning Program are to:

- strengthen the integration of historic preservation into the broader public policy and land-use planning and decision-making arenas at the federal, state, tribal, and local levels;
- increase the opportunities for broad-based and diverse public participation in planning and historic preservation activities;
- expand knowledge and skills in historic preservation planning; and
- provide maximum flexibility in program administration to enable states, tribes, local governments, and federal agencies to

establish and carry out preservation planning programs that are responsive to their own needs and concerns.

PROGRAM PARTNERS

The Historic Preservation Planning Program works closely with State Historic Preservation Offices in program administration and in providing training and guidance in statewide historic preservation planning. Every State Historic Preservation Office has completed, with broad-based public involvement, a Statewide Historic Preservation Plan that addresses the full range of historic and cultural resources in the state, examines current preservation issues, and identifies goals and objectives to ensure preservation of valued resources. We have prepared a list of completed State Plans, which also contains information on who you may contact in each state if you want to learn more about these Plans.

Finally, we are embarking upon a renewed partnership with SHPOs, and with federal agencies, tribes, local communities, and private organizations to identify and develop the kinds of technical assistance and guidance that would be most helpful to these agencies and organizations in historic preservation planning.

RELATED HPS PROGRAMS

Cultural Resource Mapping Services
Certified Local Government Program
Technical Preservation Services for Historic Buildings
American Battlefield Protection Program
Tribal Preservation Program
Historic Landscape Initiative
National Historic Landmarks Assistance Initiative
Federal Agency Preservation Assistance Program
Historic Preservation Fund

NPS PROGRAMS

Archeology and Ethnography
National Maritime Initiative
National Historic Landmark Survey
National Register of Historic Places
Rivers and Trails Conservation Assistance Program
Park Planning

NATIONAL AND OTHER HELPFUL ORGANIZATIONS

American Planning Association
Planners Web (Planning Commissioners Journal)
Planning and Architecture Internet Resource Center

LEARN MORE ABOUT IT

Write: Historic Preservation Planning Program, Heritage Preservation Services, 1849 C Street, NW, NC330 Washington, DC 20240
e-mail: Susan Henry-Renaud **or** hps-info@nps.gov

APPENDIX 2B

PREFACE

Preserving historic properties as important reflections of our American heritage became a national policy through passage of the Antiquities Act of 1906, the Historic Sites Act of 1935, and the National Historic Preservation Act of 1966, as amended. The Historic Sites Act authorized the Secretary of the Interior to identify and recognize properties of national significance (National Historic Landmarks) in United States history and archeology. The National Historic Preservation Act of 1966 authorized the Secretary to expand this recognition to properties of local and State significance in American history, architecture, archeology, engineering, and culture, and worthy of preservation. The National Register of Historic Places is the official list of these recognized properties, and is maintained and expanded by the National Park Service on behalf of the Secretary of the Interior.

The National Register of Historic Places documents the appearance and importance of districts, sites, buildings, structures, and objects significant in our prehistory and history. These properties represent the major patterns of our shared local, State, and national experience. To guide the selection of properties included in the National Register, the National Park Service has developed the National Register Criteria for Evaluation. These criteria are standards by which every property that is nominated to the National Register is judged. In addition, the National Park Service has developed criteria for the recognition of nationally significant properties, which are designated National Historic Landmarks and prehistoric and historic units of the National Park System. Both these sets of criteria were developed to be consistent with the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation, which are uniform, national standards for preservation activities.**(1)**

This publication explains how the National Park Service applies these criteria in evaluating the wide range of properties that may be significant in local, State, and national history. It should be used by anyone who must decide if a particular property qualifies for the National Register of Historic Places. Listing properties in the National Register is an important step in a nationwide preservation process. The responsibility for the identification, initial evaluation, nomination, and treatment of historic resources lies with private individuals, State historic preservation offices, and Federal preservation offices, local governments, and Indian tribes. The final evaluation and listing of properties in the National Register is the responsibility of the Keeper of the National Register. This bulletin was prepared by staff of the National Register Branch, Interagency Resources Division, National Park Service, with the assistance of the History Division. It was originally issued in draft form in 1982. The draft was revised into final form by Patrick W. Andrus, Historian, National Park Service, and edited by Rebecca H. Shrimpton, Consulting Historian.

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(1) The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation

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Revised *August 16, 1995*

APPENDIX 2B

HPS Heritage Preservation Services

Technical Preservation Services for HISTORIC BUILDINGS National Park Service

"Caring for Your Historic Building"

American Battlefields

Historic Buildings

Historic Landmarks

Historic Landscapes

Tribal Communities

- Welcome
- What We Do
- Search
- E-Mail

The Secretary of the Interior's Standards for the Treatment of Historic Properties, 1995

Four Treatment Approaches

There are Standards for four distinct, but interrelated, approaches to the treatment of historic properties--preservation, rehabilitation, restoration, and reconstruction.

Preservation focuses on the maintenance and repair of existing historic materials and retention of a property's form as it has evolved over time. (Protection and Stabilization have now been consolidated under this treatment.)

Rehabilitation acknowledges the need to alter or add to a historic property to meet continuing or changing uses while retaining the property's historic character.

Restoration depicts a property at a particular period of time in its history, while removing evidence of other periods.

Reconstruction re-creates vanished or non-surviving portions of a property for interpretive purposes.

Introduction
Four Treatment Approaches
Guidance on Appropriate Treatment
Standards for Preservation
Standards for Rehabilitation
Standards for Restoration
Standards for Reconstruction
When the Standards Are Applied
Ordering Accompanying Documents

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APPENDIX 2B

HPS Heritage Preservation Services

Technical Preservation Services for HISTORIC BUILDINGS National Park Service

"Caring for Your Historic Building"

The Secretary of the Interior's Standards for the Treatment of Historic Properties, 1995

Choosing an Appropriate Treatment

Choosing an appropriate treatment for a historic building or landscape, whether preservation, rehabilitation, restoration, or reconstruction is critical. This choice always depends on a variety of factors, including its historical significance, physical condition, proposed use, and intended interpretation.

The questions that follow pertain specifically to **historic buildings**, but the process of decisionmaking would be similar for other property types:

Relative importance in history. Is the building a nationally significant resource--a rare survivor or the work of a master architect or craftsman? Did an important event take place in it? National Historic Landmarks, designated for their "exceptional significance in American history," or many buildings individually listed in the National Register often warrant *Preservation* or *Restoration*. Buildings that contribute to the significance of a historic district but are not individually listed in the National Register more frequently undergo *Rehabilitation* for a compatible new use.

Physical condition. What is the existing condition--or degree of material integrity--of the building prior to work? Has the original form survived largely intact or has it been altered over time? Are the alterations an important part of the building's history? *Preservation* may be appropriate if distinctive materials, features, and spaces are essentially intact and convey the building's historical significance. If the building requires more extensive repair and replacement, or if alterations or additions are necessary for a new use, then *Rehabilitation* is probably the most appropriate treatment. These key questions play major roles in determining what treatment is selected.

Proposed use. An essential, practical question to ask is: Will the building be used as it was historically or will it be given a new use? Many historic buildings can be adapted for new uses without seriously damaging their historic character; special-use properties such as grain silos, forts, ice houses, or windmills may be extremely difficult to adapt to new uses without major intervention and a resulting loss of historic character and even integrity.

Mandated code requirements. Regardless of the treatment, code requirements will need to be taken into consideration. But if hastily or

poorly designed, code-required work may jeopardize a building's materials as well as its historic character. Thus, if a building needs to be seismically upgraded, modifications to the historic appearance should be minimal. Abatement of lead paint and asbestos within historic buildings requires particular care if important historic finishes are not to be adversely affected. Finally, alterations and new construction needed to meet accessibility requirements under the Americans with Disabilities Act of 1990 should be designed to minimize material loss and visual change to a historic building.

Introduction
Four Treatment Approaches
Choosing an Appropriate Treatment

[illegible]
[illegible] Rehabilitation
[illegible]
[illegible]

[illegible] Standards are Regulatory
[illegible] Guidelines

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APPENDIX 2B

HPS Heritage Preservation Services

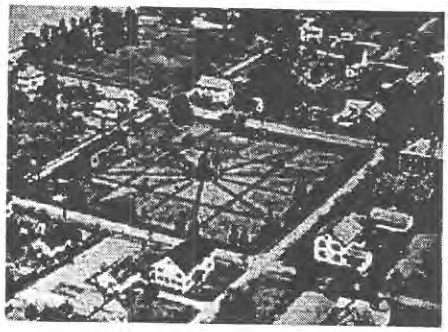
Technical Preservation Services for HISTORIC BUILDINGS

National Park Service

"Caring for Your Historic Building"

The Secretary of the Interior's Standards for the Treatment of Historic Properties, 1995

Standards for Preservation



PRESERVATION IS DEFINED *as the act or process of applying measures necessary to sustain the existing form, integrity, and materials of an historic property. Work, including preliminary measures to protect and stabilize the property, generally focuses upon the ongoing maintenance and repair of historic materials and features rather than extensive replacement and new construction. New exterior additions are not within the scope of this treatment; however, the limited and sensitive upgrading of mechanical, electrical, and plumbing systems and other code-required work to make properties functional is appropriate within a preservation project.*

1. A property will be used as it was historically, or be given a new use that maximizes the retention of distinctive materials, features, spaces, and spatial relationships. Where a treatment and use have not been identified, a property will be protected and, if necessary, stabilized until additional work may be undertaken.
2. The historic character of a property will be retained and preserved. The replacement of intact or repairable historic materials or alteration of features, spaces, and spatial relationships that characterize a property will be avoided.
3. Each property will be recognized as a physical record of its time, place, and use. Work needed to stabilize, consolidate, and conserve existing historic materials and features will be physically and visually compatible, identifiable upon close inspection, and properly documented for future research.
4. Changes to a property that have acquired historic significance in their own right will be retained and preserved.
5. Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved.
6. The existing condition of historic features will be evaluated to determine the appropriate level of intervention needed. Where the severity of deterioration requires repair or limited replacement of a distinctive feature, the new material will match the old in composition, design, color, and texture.
7. Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.
8. Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be

undertaken.

PRESERVATION AS A TREATMENT. When the property's distinctive materials, features, and spaces are essentially intact and thus convey the historic significance without extensive repair or replacement; when depiction at a particular period of time is not appropriate; and when a continuing or new use does not require additions or extensive alterations, Preservation may be considered as a treatment.

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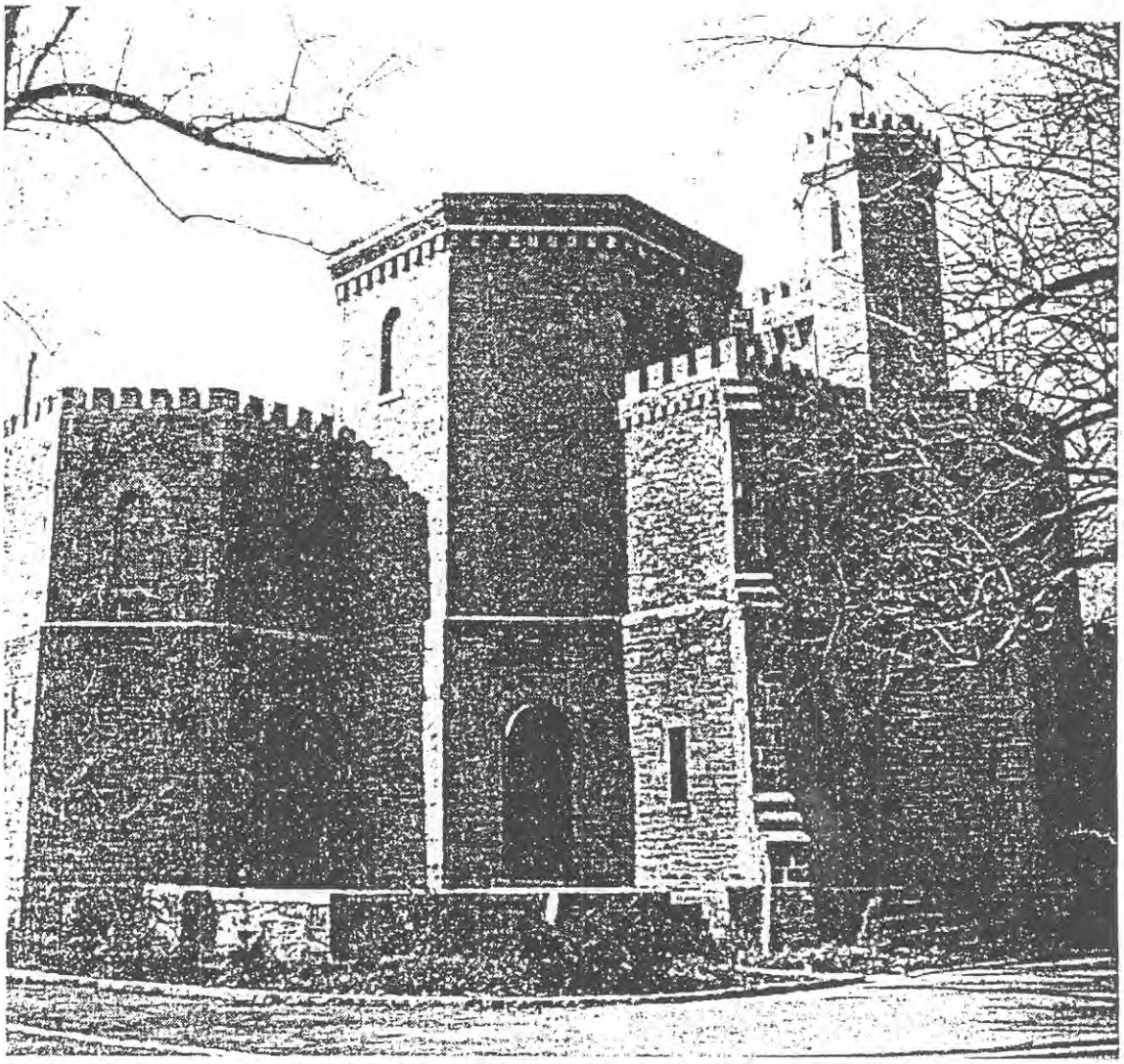
LANDMARKS AND HISTORIC DISTRICTS: THE DESIGNATION PROCESS



New York City Landmarks Preservation Commission
April 1996

What is the Landmarks Preservation Commission?

The Landmarks Preservation Commission (LPC) is the New York City agency that is responsible for identifying and designating the city's individual landmarks and the buildings in the city's historic districts. The Commission also regulates changes to designated buildings.

The agency, consisting of eleven Commissioners and a full-time staff, is called the Landmarks Preservation Commission. That name is also used to refer to the eleven Commissioners acting as a body.

What types of properties can be designated?

The Landmarks Law requires that, to be designated, a potential landmark must be at least 30 years old and must possess "a special character or special historical or aesthetic interest or value as part of the development, heritage, or cultural characteristics of the city, state, or nation".

There are four types of landmarks:

(1) Individual Landmarks (individual structures that can range from bridges to rowhouses to skyscrapers; examples include the Woolworth Building, the Langston Hughes House in Harlem, and the Wonder Wheel at Coney Island);

(2) Interior Landmarks (building interiors that are customarily open or accessible to the public, such as the Marine Air Terminal at LaGuardia Airport, the RCA Building Lobby, and the Ed Sullivan Theater);

(3) Scenic Landmarks (city-owned parks or other landscape features, such as Prospect Park, Central Park, and Ocean Parkway); and

(4) Historic Districts (areas of the city that possess architectural and historical significance and a distinct "sense of place," such as Ladies Mile in Manhattan, Cobble Hill in Brooklyn, and St. George-New Brighton in Staten Island).

What is the LPC's procedure for considering and designating potential landmarks?

The process is as follows:

1. <u>Requests for Evaluation.</u>
   The LPC receives a steady stream of suggestions for designation from interested citizens, property owners, community groups, public officials, and others. Landmarks Commissioners and staff also may identify potential buildings and areas of interest. The Commission asks members of the public who propose

properties for potential designation to fill out a Request for Evaluation (RFE) form. This form requests the individual to provide as much information about the property as possible, including photographs and/or slides.

2. Evaluation.
Once the LPC receives a request, an internal RFE Committee, consisting of the Chairman, the Executive Director, the Chief of Staff, the Director of Research, and other agency staff members, reviews the materials submitted and discusses whether the property meets the criteria for designation. The Director of Research then sends a letter to the person who submitted the request, informing him or her of the committee's determination.

3. Calendaring and Commission Review.
If the internal RFE Committee determines that a proposed historic property merits further consideration, the property is reviewed by the Designation Committee, which consists of five Commissioners. The Designation Committee then votes on whether to send the property to the full Commission for review.

The full Commission reviews such potential landmarks at public meetings. At these meetings the Commission can vote to schedule a public hearing on the properties they believe merit further review.

For structures being considered as individual landmarks, the LPC staff usually contacts the owner at this stage or before to discuss the meaning of landmark designation and the designation process. One or more meetings and/or site visits are scheduled with the owner or owner's representative to discuss potential regulatory issues.

4. Public Hearing.
The LPC holds a public hearing for each property that the full Commission has voted to consider for designation. Notice of the hearing is published in the *City Record* and sent to the property owner, the City Planning Commission, and the affected community boards and elected officials.

At the hearing a member of the Research Department makes a brief presentation about the property under consideration. The Chairman then asks whether the owner or a representative of the owner would like to speak. All other interested parties are then encouraged to present their opinions on the proposed designation. Interested parties can also submit written statements about the proposed

designation at the hearing or after the hearing, up until the time that the Commission votes on the proposed designation.

5. Discussion and Designation Report.
After the hearing is closed, the Commissioners discuss the proposed designation at one or more public meetings. While the Commissioners are considering the property, the Research Department writes a detailed designation report, describing the potential landmark's architectural, historical, and/or cultural significance. A copy is sent to the owner for review.

6. Commission Vote.
The Commission then votes on the designation at a public meeting. Six votes are needed to approve or deny a designation. Within ten days, the LPC files copies of the final designation report with the City Council, the City Planning Commission, and other city agencies. The LPC also sends a Notice of Designation to the property owner and registers the Notice at the City Register's or County Clerk's Office.

7. City Planning Commission Report.
For all designations, the City Planning Commission has 60 days in which to submit a report to the City Council on the effects of the designation as it relates to zoning, projected public improvements, and any other city plans for the development or improvement of the area involved. For Historic Districts, the City Planning Commission must also hold a public hearing.

8. City Council Vote.
The City Council has 120 days from the time of the LPC filing to modify or disapprove the designation. A majority vote is required. The Mayor can veto the City Council vote within five days; the City Council can override a Mayoral veto by two-thirds vote within 10 days.

For more information about the Landmarks Preservation Commission and the effects of landmark designation, contact Jared Knowles, Public Information Officer, 100 Old Slip, New York, NY 10005; (212) 487-6782.

A.G.S.

Photo of Fonthill (the Edwin Forrest House, now the Admissions Office of the College of Mount St. Vincent, West 261st Street at Palisade Avenue, the Bronx) by Carl Forster

New Jersey Institute of Technology

A Public
Research University

To: Lynda Aron, High School of Arts and Business
From: Kate Burns Ottavino, Center for Architecture and Building Science Research
Re: Grades 9-12 lesson plans, edits and comments on content for Historic Preservation core curriculum development

Grade 9 – Aim: You may wish in this section to refer to the origins of the Arch in early Rome and the concepts of gateway, threshold, and monumentality. The students might explore what influences these concepts may have had in the Renaissance selection and adaptation of this form to become the Proscenium Arch. An emphasis should be placed on the physical exploration of the spatial and emotional experience created by being under, on one side or another, of an arch in the creation of the experience of theater.

Homework: Excellent tool for assessing the quality of the class. This type of homework assignment should be given for each year's lesson plan, in each of the four disciplines, moving towards an interdisciplinary assessment project for each year 9 through 12

This lesson could be readily adapted to the planning and construct of Worlds Fair ground buildings at the Colombian Exposition of 1893, the 1939-40 and the 1964-65 New York Worlds Fair buildings.

Grade 10 - Text: Add to the information on the life and times of Stanford White, above and beyond the NY *Times* article "An Architect's Mark on the Landscape" by visiting the exhibit under review so that the students can write a more informative essay. Does the English Examination Guide p. 37-52 include such information?

Activities: 3) What resources are being provided for the students to create informative essays on Stanford White'? This may be a good opportunity for a class visit to the school library/ a field trip to the local public or main branch of the NY public library. Students could individually research specific aspects of the life and times of the architect to see what they can come up with collectively to make the essay more informative.

Assessment Project: The assessment project does not seem to have a direct correlation to the lessons aim of Writing an Informative Essay. Perhaps the students could write an imaginary essay covering the subject of the assessment project as it is currently presented. The intent of the essay might be to inform the reader about the writer's findings or conclusions he or she has drawn from reading or listening to the Committee's Report to the Landmarks Commission. In the essay they could cover (inform the reader by describing) the imaginary results of the Committee's Report on Items I - 7. An alternative could be to do the assessment project as you have defined it and then have the students write an informative essay about what they actually did. Perhaps some do the project and some write about it....

The Assessment Project could be made more interdisciplinary by including reference to a conditions report of the school building from the science and engineering classes perspective; a description of the

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building from the architectural/arts evaluation perspective including the proposed improvements; and a brief description of how the building came to be the home of the HSAB after being a former bowling alley - Any famous bowlers ever bowl here?!

This lesson could be made readily relevant to the Worlds Fair Grounds from the perspective of what was happening at the HSAB building or building site during the World Fairs. Perhaps the Worlds Fair connection could become an interesting influence on the design for the development of the outside of the HSAB building. (A fun example of this is the bank on Queens Boulevard just east of 71st Continental Avenue on the south aide of the boulevard. On its facade they created a lovely mosaic of the plan of Forest Hills Gardens with vignettes of street scenes from the community surrounding it as a border.)

Grade 11 - This lesson directly relates to Historic Preservation as the core curriculum subject matter and could be related directly to the Worlds Fair grounds where many buildings are suffering demolition by neglect.

Assessment Project: This project can be applied in an interdisciplinary manner by using the World's Fair site to explore the concept of ruins or, less romantically, how buildings suffer demolition by neglect (lack of social and political responsibility and/or financial creativity). Interdisciplinary considerations in the other subjects could include: Science, the physical deterioration of the site; Art, the poetic images conjured up by ruins i.e. are any of the ruins from the Worlds Fair poetic perhaps - the NYS pavilion - or are they just forlorn and begging for a use to be made relevant - Hall of Science - or surreal like the spaceship graveyard; History, why and what were people creating when they created World's Fairs? How have World's Fairs changed over the years? Why do people never know what to do with the remains of the Fair?

Grade 12 – The lesson directly relates to Historic Preservation as the core curriculum subject matter.

Assessment Project: This project can be applied in an interdisciplinary way to the World's Fair site by using the fair ground and buildings as the subject of the games goal. What the students define as the goal regarding the fate of the buildings and the requirements of the infrastructure necessary to preserve them, if that is what the students think is appropriate, will be revealing regarding the collective impact of their interdisciplinary classes and how this conveys the critical thinking skills and practical knowledge required for the methodical practice of Historic Preservation.

Conclusion

It is clear at this point in the NJIT Center's project to design a four-year interdisciplinary integrated Historic Preservation core curriculum for a High School for the Preservation Arts that each of these assessment projects are preliminary in determining the success of the curriculum's interdisciplinary premise as a means to convey both critical thinking skills and practical knowledge. However, these assessment projects will be immediately applicable in assisting in the overall determination of the effectiveness of the premise at each grade level as each grade level reveals its grasp of the holistic nature of the discipline of historic preservation through its application of each of the subject areas studied via the assessment project.

HIGH SCHOOL FOR ARTS: CURRICULUM DEVELOPMENT AND ASSESSMENT

Language Arts

The purpose of the following lessons is to incorporate architectural and historic references into our study of literature and the language arts in order to build an awareness and appreciation of our past, present and future.

The New York Comprehensive English Exam and English Language Arts Standards are used as Performance Indicators. These lessons are general in concept while using the population and location of the High School for Arts and Business in particular.

Language Arts
Grade 9 Lesson Plan
Lynda Aron

Topic: The Proscenium Arch

Aim: To identify and utilize the concept and reality of the arch in theater, literature and life.

Proscenium Arches were first seen during the Italian Renaissance, around 1613.

They were ornamental and coincided with the innovation of painted scenery.
Draw the following information from the students in an inductive way:
Its purpose was to act as a picture frame, drawing the audience into the play's world. On a symbolic level it creates a world of illusion.
On a metaphoric level it may represent a hidden, self-contained world, a more perfect, aesthetic or desirable reality.

Do Now: List the different roles the arch has played in history and city planning (refer to previous teaching on Washington Square and Grand Army Plaza.). Pictures and Drawings of the Proscenium Arch and Architectural Arches to be used.

Activities: 1.) List all the possibilities of the function of the arch in literature.
2.) Define and explain P.A.
3.) Discuss the uses of the arch in viewing a play and the Arches history in theatre.
4.) Explore how the concept of an arch is used in physics and how that can be stretched to a metaphor.
5.) Ask students to explain and share their views.
6.) Have the class participate in reaction to the following statements:

During Moving Up Day the students passed through the arch from 9th to 10th grade.

Our discussion helped us "bridge the gap"

Notes and further discussion:

What do frames do when viewing a picture?

How could the same concept be applied in viewing a play?

Homework: From your knowledge of Shakespeare's view of theatre:
Why didn't he use the arch?

Summary

By examining and assessing an architectural form from various perspectives students are increasing their bank of knowledge and their assessment skills.

Grade 9 Assessment Project

You have been chosen for the committee to select an appropriate arch to be placed on the moon.

This monument is to be a landmark (both metaphorically and in actuality.)

Using your knowledge of poetry, literature and human nature: write, construct, or draw a detailed plan for your monument.

You are expected to support your choice based on the ideas and details of universal theme.

You may work individually or in pairs. You must have a minimum of one page (250 words) work to accompany any visual representation.

If you choose to produce a work that is entirely written (no visuals) you must include at least one literary reference (this could be anything from a poem, nursery rhyme, lyric or text).

Homework

Write a reflective essay on how today's lesson can prepare you for your final assessment project.

You must present an outlined prospectus two weeks before project's due date. Individuals working in pairs must clearly state each participant's role in the project.

Curriculum Support

1.) Literary Terms
2.) Components of an essay
3.) Thematic approach to literature
4.) Philosophical and Humanitarian concerns
5.) Concepts of Metaphor and Irony
6.) Problem Solving to affect change

Interdisciplinary Linkage

Science

1.) material exposure and durability
2.) the concept of an arch from a scientific perspective.

Art

1.) referenced works
2.) monument and landmark description and architecture.

History

1.) the role of the arch in city planning, memorials and war.
2.) the architecture and the arch throughout dramatic history.

Grade 10 Lesson Plan

Topic: Language Arts: Stanford White's Influence on Long Island

Previous Night's Homework:

Read article "An Architect's Mark on the Landscape" New York Times 7/26/98 for Literal and Figurative information:

Outlining article.

Aim: To research in preparation for writing an Informative Essay.

Text: The new comprehensive English Examination Guide. P. 37-52 and the New York Times article.

Activities:

1.) Review previous night's homework.

2.) With students participation list outline on board having students add and delete points.

3.) Have groups of four students create informative essays on Stanford White.

4.) Share each group's essay, adding and deleting and eventually producing one four-paragraph essay.

5.) Homework: use the grading rubric in relation to the essay.

This lesson allows students to study the components of an informative essay, thereby enabling them to demonstrate their knowledge and ability to write and assess said form. It also acts as a preparation for the assessment project.

Grade 10 Assessment Project

You are on the Community Service Squad at your school. The students and faculty are proud of the school's focus combining art and business for the future. They want to bring attention and public awareness to the building and its purpose.

You are asked to spearhead a committee that will approach the Neighborhood Landmarks Commission and government agencies about beautifying and drawing positive attention to the building.

Prepare a report for the Commission including the following

1.) Two or three proposed ideas for the outside of H.S. for A and B.
2.) the cost of proposal
3.) community surveys
4.) artist rendering or blueprint plan
5.) some facts and some opinions
6.) a chart or graph showing how much can be done for money raised
7.) an idea for a monument or architectural interest

Extra Credit:

Set up a presentation panel where you and at least three others would present the proposal to three community members. A lively debate will win all six of you a trip to an architectural point of interest.

Grade 11 Lesson Plan

Topic: Restoration and Recovery: Its Practicality and Meaning.

Text: New York Times article: Scattered Fragments of old Penn Station: 8/16/98.

Aim: Why and how do we quest for preservation of our past?

Do Now: Prepare to discuss points of relevance from the article and answer the above question.

Activities: Students are to respond to their written understanding of the included study guide. Students are to create and share new understanding of philosophical, historical, political, and artistic ramifications of restoration and presentation as they pertain to present day, real life in New York City and its recent history.

Identify the meanings of the following words from the article:

1.) Doric column
2.) Dispersal
3.) Remnants
4.) Concourse
5.) Poignant
6.) Balusters
7.) Continuum
8.) Corinthian and ionic
9.) Subsidiary
10.) Sculptural
11.) "Reweave those threats" What does this mean?
12.) Corinthian columns – not solid stone but merely decorative casings over steel. Why is this interesting?
13.) Where is "Day" now? What are the emotional/ psychological and philosophical components to all this?
14.) Why do preservationists want to incorporate parts of the old into the new?
15.) Why isn't there a budget for archeological treasure?
16.) How will money for restoration be raised?
17.) What is the significance of Mr. and Mrs. Moore's salvaging the stools and carrying them home in a "checker cab"? What are "checker cabs"?
18.) Who is Mr. Rustin and what do you think his connection to Penn Station and the balusters was?
19.) What is an executor and why would he donate the balusters in honor of Mr. Rustin and A.P. Randolph?
20.) Why did Mr. Aheam want the granite balusters? (Use a direct quote).

21.) The least portable fragment (the 35-foot Doric column) "was intended as a beacon to spur development of Verazano College. What did the author mean beacon? What is a beacon?

22.) The statues are a reminder of what New York has lost and gained.
What did it lose?
What did it gain?
What is a turning point?

23.) Why was all this a turning point?

24.) What is meant by the last sentence?

Grade 11 Assessment Project

Mr. Moore's photographs show a "lyrical sculptural beauty slowly reduced to stark structural bones."

Using the above quote, as a critical lens: In writing or in a prepared visual presentation use the above statement as an allegory, analogy, irony or metaphor for another situation. This may be philosophical, psychological, historical, sociological, intellectual, or whimsical.

You may do a literary or cinematic critique in which you would compare two, or more, books, poems, or films as viewed through this lens.

If your presentation is visual you must be able to support your work with at least a one-page thesis.

Grade 12 Lesson Plan

Topic: "An Architect's Mark on the Landscape" The power of Individual Contribution.

Aim: How have certain individuals left their creative imprint on society? How can creative non-conformity serve to create a lasting endowment?

Do Now: Review notes from previous three nights homework assignments, which were:

1.) Read and take notes on Quest magazine article on J.P. Morgan.
2.) Review notes on Age of Innocence and Washington Square.
3.) Read and Write a three-paragraph review of New York Times article on Stanford White, 7/26/98, "An Architect's Mark on the Landscape".

Activities:

Discuss how Edith Wharton was molded to fit into a "society women's role" and what proper social graces were.

Draw comparisons between social mores of Wharton's characters and her own life.

Discuss Stanford White's perspective on life in "the country".

Discuss J.P. Morgan, his second marriage and his daughter Anne. Point out his dedication to bringing "the cream of Western Culture to the United States" and how the library is a monument to his vision of bringing sophisticated beauty to America.

Elicit connections from students on the said individuals and their contributions to society.

Underline the importance of individuality, creativity, and nonconformity.

Discuss how each person had to go against society in order to contribute to it and how their work has dremed them as immortal. (With high level classes an existential connection should be made.).

Anne Morgan
Fanny Morgan (J.P. second wife)
Edith Wharton and her characters

Emphasize the procedure of moral and spiritual values over material values of the time.

Summarize by asking how these people were the architects of their era and what their mark was on the landscape of our country.

Previous Assignments Relating to Lesson:

The reading and study of Edith Wharton's Age of Innocence and Henry James' Washington Square.

Quest magazine article on J.P. Morgan.

Using references from works read have students debate the case for having things change vs. the need to remain the same.

Some examples:

J.P. Morgan's love of his first wife and how it affected his second wife (maybe the second Mrs. Morgan didn't mind because she wanted the social position in order to do charitable deeds and obtain great European works of art.)

Anne Morgan's rebelliousness and how that woke from her from Victorian upbringing. She was a major character in paving the way for independent women and contributing much in various realms of 20th century life.

An economical/ political drawing room story (or play) about Morgan heading a plan to rescue the government and create the Federal Reserve System.

High School for the Preservation Arts: Curriculum Development and Assessment - Grades 9-12 by Kevin Lawlor, Social Studies Teacher, High School for Arts and Business Summer 1998

Lesson Plans Comments: Kate Burns Ottavino, Director, Preservation Technology (See attached Lesson Plans)

Grade 9 Lesson Plan

[Page 1] Introduction: very good (last paragraph)

[Page 2] Assessment Project

Strength of the design is in the Assessment Project

Good opportunity to see what political decisions would be reached on this subject in different governments

Front load vs uncover/discover

End of 6th para: What is the product asked: "How public is the student's work"

[Page 3] Interdisciplinary Possibilities: no comment

[Page 4] - Grade 9 Plan

Respond to Joe McDonald - old style theory

This lesson more preservation oriented

Explain political decision making process and how would they effect the decisions made on what movement is picked.

Less: social, political aspects of looking at a project

Grade 10 Lesson Plan

[Page 5] - Introduction Grade 10

This lesson plan needs to integrate preservation perhaps through the subject of memory- how do we remember human rights issues-triumphs and failures

[Page 6] - Assessment Project

3rd para at end: Including examples of how people remembered these events- could be oral history, songs, poems

-Public places where human rights can be denied publicly i.e. Tienemen Square

-Address the subject of power and its architectural expression

-Preservation of Memory? first in technical class of the unit

-Preservation as a vehicle for the interpretation of history

-Prison architecture as a building type

-Courthouses are where human rights are tried

[Page 7] - Interdisciplinary Possibilities

Art: Vehicle for memory

Architecture of Power - Courts, prison, public spaces

Language arts: how the use of language colors our experience of an event

Science:
-Forensic science to find our what really happened
-Use of science to create weapons of destruction

[Page 8/9] - Grade 10 Plan

(3) How would you make the tangible your feelings?
(5) How have these rights violations been documented and disseminated
How should they be remembered

[Page 9]

(6) How were these experiences presented
Were any commemorated
How did that commemoration interpret that event?
7. Where were the human rights violated
What was the place like (Holocaust prisons, etc)
Solitary Confinement Vs. gang cells

Grade 11 Lesson Plan

[Page 10] - Introduction Grade 11

Pose a question raising a preservation issue such as:

The garment manufacturing industry has moved to Korea to find cheaper labor and now all the loft factory's have become apartments, should this statue still stay where it is? Why/Why not

or

Industry has stayed but all the workers are Asian is this statue still relevant ?. Why/Why not

Have the issues facing the worker changed

Has technology changed

Have the social and economic parameters stayed the same and only the faces of the workers changed.

Where have the old workers gone ? What does it mean to assimilate? What does it mean to "move up" ?

[Page 11] - Assessment Project

2nd Para: Where in NYC would be most appropriate for each monument to be sited and Why?

If something is already there what are reasons for removing it

Also what are reason for not moving it.

Under "lessons related"

How do people who came as slaves feel about Ellis Island

Do students think theme of Ellis Island should be used to explore this subject

How can historic sites be used to amplify issues?

When we look on Historic Site or Monument what are the issues raised

Why is that Monument on a particular site

Whose idea was it to put it there (was the opposition?)

[Page 11 cont.]

Who funded it?

What Social Political view does it express by its form and style

Is it a "period piece" and what make a period piece.

[Page 12] - Interdisciplinary

Language Arts: - Art criticism

Science: How do different materials weather and does this affect the appearance of the monument over time

What does a shiny new appearance say vs. a weathered appearance

[Page 13,14] - Grade 11 Plan

Excellent lesson plan

Grade 12 Lesson Plan

[Page 15] Introduction: No comment

[Page 16] Assessment Project

1. Identification: add word preservation after "local"

2. Analysis: add have created and could after "might"

4. Implementation: add at end of sentence;
   Preservation issues could be tree removal or any change in the neighborhood of the physical environment.

HIGH SCHOOL FOR THE PRESERVATION ARTS: CURRICULUM DEVELOPMENT AND ASSESSMENT

INTRODUCTION TO GRADE 9 LESSON PLAN FOR SOCIAL STUDIES

The lesson plan is inspired by the following statements:

+examine the challenges and successes in the nation-building experiences of countries in Africa, Southeast Asia, Latin America, the Caribbean, and the Middle East.

+demonstrate an understanding of the major events that shaped present conditions in the pre-nation-state histories of Africa, South and Southeast Asia, East Asia, Latin America and the Caribbean, and the Middle East.

+examine the significant political, economic, and social changes from the advent of nationalist movements to the development of modern nation-states in Africa, South and Southeast Asia, East Asia, Latin America and the Middle East.

Curriculum Frameworks p.182
Global Studies
Grade 9

The lesson and the overall framework of which it is a part focus on Peru, but the procedure might be used with any other nation or region of the world mentioned in the Grade 9 Global Studies Curriculum Frameworks.

ASSESSMENT PROJECT

A very strange earthquake has hit Lima, Peru.

The special characteristic of this quake is the fact that it was very severe and very restricted in the area where it hit. It only hit the plaza in front of the Cathedral in the "Spanish Colonial" section of the city.

The plaza was in shambles, but the only real destruction was the statue of Francisco Pizarro. This monument to the Spanish Conquistador was completely destroyed.

After the rubble was cleared, a proposal to restore the monument surfaced.

There were reactions to the proposal.

Descendants of the Incan Empire proposed that a statue of Pachacuti, the founder of the Incan Empire, be placed in the plaza. Many Peruvians wanted a statue of Simon Bolivar, the "Liberator", in the plaza. Others advocated a monument to Jose de San Martin. A small group of Peruvians wanted a statue of President Fujimori.

The assessment project for this unit is for the students to resolve the controversy. They will do this in a written essay which will explain their decision. The second half of the assignment will be for the students to design an historical monument to be placed in the reconstructed plaza.

The students may complete the assignment individually or in groups. Each student must present a preliminary plan one week before the completion date. If the students decide to work in a group, they must indicate in the preliminary plan just what each student will contribute in the final project.

++

Related lessons which provide background for this project touch on the following topics:

- -geography of Peru
- -the Incan Empire
- -Colonial Peru
- -Nationalism in South America
- -Politics and Public Policy

INTERDISCIPLINARY POSSIBILITIES:

Science

-the nature of an earthquake
-effect of climate on materials used in monuments

Art

-design of a monument
-choice of artistic materials

Language Arts

-reading of literature from Incan, Colonial, nationalistic, and modern Peru.

Foreign Language/Spanish

-reading of documents and literature in their original language

GRADE 9 LESSON PLAN
SOCIAL STUDIES
KEVIN P. LAWLOR

TOPIC: Politics and Public Policy

AIM: How does politics influence decision making?

SWBAT:

-identify "politics"
-define "viewpoint"
-understand "public" decisions
-understand evaluation
-capture the fact that evaluation is based on data.

DO NOW:

Write a paragraph telling what "political parties" do during an election campaign.

ACTIVITIES:

1. Write "Do Now"
2. Share "Do Now" paragraphs.
3. Conclude from "Do Now" that each political party tries to promote its candidate.
4. Ask students to explain these statements:

"Each politician has his/her own viewpoint."

"The viewpoint of a politician determines what they do."

**By reacting to the statements the students will come up with a definition of "viewpoints" and "public policy"

5. What do we call the process of seeing whether a viewpoint is good or true or sensible?
   -Students will conclude that the process is called "Evaluation".
6. A problem: Most politician sound good. How does one evaluate opposing viewpoints?
   -Students will conclude that proof or data will determine the validity of viewpoints.

7 <u>SUMMARY:</u>

The class talked about "politics", "public policy", "viewpoints", and "evaluation".

Individually and then in groups the students will answer the question: How does this lesson help you with the final project concerning the monument for Lima, Peru?

HIGH SCHOOL FOR THE PRESERVATION ARTS: CURRICULUM DEVELOPMENT AND ASSESSMENT

INTRODUCTION TO GRADE 10 LESSON PLAN FOR SOCIAL STUDIES

The lesson is inspired the following statements:

+demonstrate an understanding of the evolution of democratic principles and the continuing struggle for human rights throughout the world, and take personal and collective responsibility for supporting democratic ideals and human rights.

+ demonstrate the ability to investigate, analyze and discuss issues of global concern, using knowledge acquired in their two-year study of regions around the world.

Curriculum Frameworks p. 184-5
Global Studies
Grade 10

The lesson which follows focuses on "human rights", and it will serve as an introduction to the unit which will have an assessment project to be handed in at the end of the unit.

This lesson will fit into the curriculum somewhere near the end of Global IV when the students have already studied the different regions of the world and have begun to focus on "global issues" as a preparation for the Regents exam at the end of Global IV.

ASSESSMENT PROJECT

In this unit of the Global Studies curriculum special attention will be give to the question of human right in different parts of the world.

The assessment project at the end of the unit will focus on human rights.

Each student will prepare a speech to be delivered at the United Nations. There is a special committee of the UN which is deciding about an exposition to be displayed in the main lobby of UN next year.

After having studied about human rights and having seen the violations of human rights in different parts of the world as well as having seen the ways that groups and individuals struggle for the promotion of human right, each student will prepare a speech that might be delivered at the UN in which he/she outlines a proposal for a display in the UN lobby.

The speech will describe the situation of human rights in the place chosen. The speech will also cite the persons who are trying to promote the cause of human rights in the given situation.

The speech will be accompanied by graphics which will depict the violations of human rights in an artistic manner.

The project may be done as individuals or in groups. A detailed description of the plan for each group/individual must be presented a week prior to the date when the project is due.

++

Follow up lessons:

-the Holocaust and human rights
-Apartheid and human rights
-human rights in China
-the right to vote and its history
-freedom of speech

INTERDISCIPLINARY POSSIBILITIES

Art

-design of the exposition
-choice of artistic medium

Language arts

-reading of literature that describes the situation of human rights in different parts of the world

Foreign Language

-reading of documents and literature in Spanish that speak of human rights violations in different parts of Latin America.

GRADE 10 LESSON PLAN
GLOBAL STUDIES
KEVIN P. LAWLOR

TOPIC: Human Rights

AIM: How are human rights violated in today's world?

SWBAT:

-define "human right"
-feel the violation of their own human rights
-make a list of "human" rights
-describe various violations of human rights
-name violations of human rights in different parts of the world

DO NOW:

Look in the glossary of the textbook for the definition of human rights.

ACTIVITIES:

1. Do Now - a common definition of "human rights" is the following: Human right are the natural rights to which all human beings are entitled".

2. Role Play

(Participating students will be prepared for this short role play.)

The role play depicts a student lying about another student. The results are that the "lied about student" is hurt and isolated. Also this same student is not given the chance to explain him/herself. Also the same student is not invited to an upcoming birthday party.

3. Role Play Analysis:

-How do all the participants feel?
-what human right was violated?

4. List of human rights:

-what are the rights of human beings?
-students make a class list of human rights

5. Human rights in today's world:

-Have the newspapers or the TV talked about any human rights violations recently?

-After having studied different regions of the world in Global I,II,III,IV - in your opinion which region has more human rights violations?

6. Using the textbook and working in small groups the students will look for picture or graphics that depict human rights violations in different regions of the world.

Each group will be assigned a region and given page references in the text:

-Africa
-America
-Europe
-South Asia
-East Asia
-Middle East

7. Summary: Teacher elicits a summary of the lesson from ~~the~~ students and explains "project".

GRADE 11 LESSON PLAN
GLOBAL STUDIES
KEVIN P. LAWLOR

TOPIC: Experience of ethnic groups upon arrival in the U.S.A.

AIM: How do different ethnic groups feel upon arrival in the U.S. S? How do these groups survive?

SWBAT:

-identify different ethnic groups in NYC
-feel with them when they encounter obstacles and prejudice
-define "assimilation" and "acceptance"
-recognize the contributions of different ethnic groups
-understand the reasons for migrations

DO NOW:

-Look at the sculpture presented by the teacher (of the Jewish man at the sewing machine)

ACTIVITIES:

1. Share reactions to the sculpture:
   -What is the man doing?
   -What is the ethnicity of the man ?
   -Why is this sculpture in the garment district?
   -What year is depicted in this sculpture?

2. Obstacles encountered by immigrants:

-The teacher will share the fact that many Jewish people arrived in the United States because of religious oppression in Europe. The teacher will remind the students of their study of the Holocaust when the Nazis attempted genocide against the Jewish people. After recalling these facts the teacher will begin a dialogue about the problems encountered by these Jewish people upon arrival in the U.S.A...

-the dialogue will highlight the need to learn another language, to adapt to a new culture, to understand new customs and cultures, the experience of prejudice, the need to make a living in low paying jobs, etc.

3. Immigrant Groups today :
   -What are the principle immigrant groups in N.Y. C. today?
   -What obstacles do they encounter upon arrival?

-Are these the same obstacles that were encountered by the "man at the sewing machine"?

4. Overcoming of Obstacles:

-How did the "man at the sewing machine" advance in his new environment?

-How do people who migrate today to the United States advance in their new environment?

-What does it mean to "advance"?

5. Summary

-Dialogue about the way that this class will help the students with their assessment project.

ASSESSMENT PROJECT

The assessment project connected to this lesson will be the design of a monument to be placed in New York City.

The new monument will exalt the contributions to NYC of one of the following:

-African American(s)
-Asian American(s)
-Hispanic American(s).

The assessment project will include a description of the contribution of the individual or the group as well as a design of the monument.

Each individual/group must hand in a plan for their project one week prior to the due date.

++

Lessons related to the present lesson include:

-the migrations of different people to the United States
-the reasons for these migrations
-the problems encountered by different groups upon arrival
- the contributions of different groups
-the role of Ellis Island in the migration process
-the "haves" and the "have knots" in New York City yesterday and today
-the experience of poverty yesterday and today.
-the solutions to poverty.

INTERDISCIPLINARY POSSIBILITIES

Art

-design of the monument
-choice of artistic medium

Language Arts

-literature readings about different ethnic groups in New York City

Science

-monument preservation for outdoor sculptures

HIGH SCHOOL FOR THE PRESERVATION ARTS: CURRICULUM DEVELOPMENT AND ASSESSMENT

INTRODUCTION TO GRADE 11 LESSON PLAN FOR SOCIAL STUDIES

The lesson is inspired by the following statement:

+understand how people from different groups have contributed to the American cultural heritage, and how events in the United States political history have impacted people from different groups.

The lesson will focus on the sculpture on Seventh Avenue and W. 38 the Street in New York City. This sculpture depicts a Jewish man at a sewing machine. The sculpture is in the heart of the garment district.

The teacher will have to prepare multiple copies of photos of this sculpture or prepare a transparency of the same.

GRADE 12 LESSON PLAN
SOCIAL STUDIES
KEVIN P. LAWLOR

TOPIC: Board of Education buildings

AIM: How does the public solve problems with school buildings?

*****N.B. THE PREPARATION FOR THE PRESENT CLASS WAS FOR THE STUDENTS -AS A HOMEWORK ASSIGNMENT OVER A PERIOD OF THREE DAYS- TO CONDUCT INTERVIEWS AMONG FAMILY, FRIENDS AND NEIGHBORS SO AS TO ASCERTAIN THE MAIN PROBLEMS IN SCHOOL BUILDINGS.**
THE QUESTION: WHAT PROBLEMS DO YOU FIND IN YOUR SCHOOL BUILDING?
THE GOAL WAS TO IDENTIFY PROBLEMS WITH GRADE SCHOOL, JUNIOR HIGH AND SENIOR HIGH SCHOOL BUILDINGS.

SWBAT:

-identify school building problems
-learn how respondents to questions at times answer the wrong questions
-separate and organize data
-relate the homework assignment to the semester assessment project

DO NOW:

-Prepare the information received in their surveys of the neighborhood so that they might present it clearly. In a special way the students should eliminate those answers that did not speak to the question asked.

ACTIVITIES:

1. Do Now
2. On student will be selected to act as a secretary.
3. Each student will share the most impressive part of the survey they conducted.
4. Dialogue about those who failed to answer the question.
5. Dialogue in order to separate the "building" problem according to levels of educational buildings: grade school, intermediate, high school.
6. Dialogue to determine the most urgent problems at each level.
7. Brainstorming to look for possible action steps in the search for solutions.

SUMMARY:

-The summarizing activity is for the students to share their ideas about the ways in which this class relates to their semester assessment project.

ASSESSMENT PROJECT

The assessment project for this semester will be done individually or in groups.

On the first day of each month each individual/group will meet briefly with the teacher to present a progress report.

The project includes four steps:

1. Identification

-the students will identify a local problem by means of conversations, interviews, and surveys.

2. Analysis

-the students will analyze how a "public policy" might change the problematic situation for the better.

3. Action Plan

-the students will devise an action plan to change the situation.

4. Implementation

-the students will begin to implement the plan(In the case of a complicated local problem) or completely implement the action plan in the case of a less complicated problem.

HIGH SCHOOL FOR THE PRESERVATION ARTS: CURRICULUM DEVELOPMENT AND ASSESSMENT

INTRODUCTION TO GRADE 12 LESSON PLAN FOR SOCIAL STUDIES

The lesson is inspired by the following statements in Curriculum Frameworks. p.187:

+analyze the formulation , implementation and evaluation of public policy at all levels of government.

+demonstrate an understanding of how to influence a public policy at all levels of government.

+ devise strategies to participate in decision-making in their schools, community and nation.

+apply problem-solving processes to formulate possible solutions to local, state, national, and global problems.

The lesson that is presented here can be preceded by and follow by lessons with these topics:

-analysis of federal, state, and local government
-visits to local politicians
-walking tours of the immediate neighborhood of the school
-comparison of food prices in local stores
- a class on the beauty or lack of beauty in local buildings
-an analysis of the structure of the Board of Education.

NJIT
New Jersey Institute of Technology

A Public
Research University

CENTER FOR ARCHITECTURE AND
BUILDING SCIENCE RESEARCH

APPENDIX 2C (3)

LESSON PLAN REVIEW 3/23/99

SUBJECT: Art Department Overview of Architectural Conservation

SUBJECTIVITY:

1. Architectural History
   C. Review European 19th Century influence on Stanford White - This could be broadened to incorporate an understanding of art as representing the "zeitgeist," or spirit of its time through Americas rejection of Victorian Architecture to embrace the Beaux Arts style as representing American civic ideals and manifest destiny. This was in sharp contrast to the Chicago School of architecture which was truly an American inspired architectural form synthesizing technology and art. The Chicago School was formally supplanted by the Beaux Arts in the Columbian Exposition of 1893. Here is an excellent opportunity to combine, History, Art, Science, and English.

Lesson Plan One - Under Objective a presentation of Building Types should preceed a study of style. Discuss how a buildings purpose structures/inspires its form. How are the types of buildings a society creates indicative of its social hierarchy and values.

Lesson Plan Two - Under Vocabulary - discuss slave labor in the context of the difficulty of extracting materials from the earth. Why is stone so hard to remove from the earth and shape into form? Is that difficulty what makes it so precious, why its use connotes monumentality? Explore the concept of size, scale and materials in the expression of monumentality.

Lesson Plan Three - Under Motivation - discuss how historic preservation can be used/abused to selectively preserve those parts of the past which validate our ideals of beauty while excluding others through neglect or demolition by neglect. Have the students find examples in their neighborhoods.

Lesson Plan Four - Under Procedure A: 2- discuss the subject of authenticity and the use of substitute materials. What aspects of a capital originally made of terra cotta might be lost if reproduced in fiberglass?

Lesson Plan Five - Under Motivation - what intrinsic qualities make an architectural masterpiece. Review the criteria to be a National and Local Landmark (see attached).

UNIVERSITY HEIGHTS
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ARCHITECTURAL PRESERVATION

CURRICULUM CONSTRUCTION & PLANNING FOR SECONDARY EDUCATION

June 3, 1998

by Bryan F. Serra, Arts Coordinator
High School for Arts and Business, Corona, NY

Sponsors:
New Jersey Institute of Technology, Newark, NJ
Center for Architecture and Building Science Research

N.Y.C. Board of Education
Division of Queens High Schools

DATE: 4/23/98

TO:

NJIT/CABSR	HSA&B
K. Ottavino	L. Aaron
N. Eliot	K. Lawlor
R. Baker	K. McGuire

FROM: Bryan Serra - H.S. for Arts & Business, Corona, NY 11368

SUBJECT: Art Department Overview of Architectural Conservation
DRAFT COPY

RATIONALE: The five lesson synopsis suggested in this project will explore *Architectural History, Architectural Criticism, Aesthetics, Studio Planning*, and *Contrasts of Contemporary Construction*. Each unit of examination will progress sequentially and parallel science, social studies, and language arts where feasible. The artisan and builder as a partner will be trained to continue cultural preservation through our majestic architectural heritage. With our integral lesson sequence - cultural adaptability, interdisciplinary learning, core planning, and technological understanding - conservation will be realized by our student population.

LESSON PROPOSALS:

Each plan or "recipe" will include the following elements, inclusive of workshop hand-outs for reference, prior to a future formalized booklet/binder:

1. SUBJECTS (1-5)
2. ACTIVITY
3. OBJECTIVE
4. MOTIVATION
5. VOCABULARY
6. MATERIALS
7. PROCEDURE
8. SCHEDULE
9. EVALUATION/INTEGRATION
10. WORKSHEET REFERENCES

SUBJECTIVITY:

1. ARCHITECTURAL HISTORY

A. Projections of Greek/Roman architectural form in context with natural form.

B. Investigate symbolic graphics and decorative elements.

C. Review European 19th Century influence on Stanford White.

D. Specific concerns and purpose of structures and materials indeginous to terrain.

E. Destruction of war and conquest. (slides/emotion) + ENVIRONMENT

2. ARCHITECTURAL CRITICISM

A. Analyse similarities and differences among Egyptian, Greek and Roman FORM. (slides)

B. Extend vocabulary discussed during unit on history.

C. Develop skills of criticizing work as it progressed by comparisons to the past.

D. Practice written and oral skill in criticism based upon the six formal ELEMENTS OF DESIGN - line, form, space, color, texture, pattern.

CONTEXT

3. AESTHETICS

A. Address questions of value, meaning, and "form following function".

B. Cultivate appreciation of differing views on decorative and structural components.

C. Role of Relief Sculpture and human representation or symbolism. (slides/worksheets)

A. WHAT HAS THE STUDENT LEARNED IN SUBJECTS 1-3 TO PREPARE THEM FOR ITEM 4A.

4. STUDIO PLANNING

A. Present a problem in reconstruction with "new" 20th century materials, and draft a solution using appropriate tools (T-square, triangle, scale, and board)

B. Compare basic drawings of Egyptian, Greek, and Roman housing for the "masses".

C. Contrast *basic* form and space, and build models with foam-core, white glue, and straight pins.

D. Construct cornice trim or tile pattern with foam by embossing or layering.

5. CONTRASTS OF CONTEMPORARY CONSTRUCTION

A. Project or view late 20th Century masters to compare span, truss, and space solutions. (Sarrinen, Wright, Fuller, Rudolph)

B. How might *plastics* have created new form and space if available thousands of years ago?

C. Can we successfully combine past historic beauty with contemporary concepts in architecture?

D. How valuable is restoration/conservation and why?

LESSON PLAN ONE

SUBJECT: Conservation & Restoration of Architecture
- Secondary Education

ACTIVITY: Architectural History Revisited

OBJECTIVE: The students will experience an historic review of our majestic architectural heritage. Contrasts and similarities of contemporary structures will enhance cultural identity.

MOTIVATION: Seeing actual neighborhood adaptations, through past historical recognition enlightens the learning process. An association of *natural form*, contrasted by the similarities of man-made form sustains enthusiasm.

VOCABULARY: Classical, atrium (open center), decorative, column, capital, frieze, cornice, facia, doric, ionic, corinthian order

MATERIALS: Workshop reference sheets as handouts, 35mm transparencies with screened projection equipment in place.

PROCEDURE:
1 - Project Workshop Sheet A and discuss.
2 - Project Workshop Sheet B and discuss
3 - Project slides and identify sites in student neighborhood previously photographed. Subjects include apartment buildings, public schools -primary and secondary, churches and burial sites. Compare similarities or differences of materials and natural form.

LESSON PLAN **ONE**

SUBJECT: Conservation & Restoration of Architecture
- Secondary Education

ACTIVITY: **Architectural History Revisited**

OBJECTIVE: The students will experience an historic review of our majestic architectural heritage. Contrasts and similarities of contemporary structures will enhance cultural identity.

MOTIVATION: Seeing actual neighborhood adaptations, through past historical recognition enlightens the learning process. An association of *natural form*, contrasted by the similarities of man-made form sustains enthusiasm.

VOCABULARY: Classical, atrium (open center), decorative, column, capital, frieze, cornice, facia, doric, ionic, corinthian order

MATERIALS: Workshop reference sheets as handouts, 35mm transparencies with screened projection equipment in place.

PROCEDURE:
1 - Project Workshop Sheet A and discuss.
2 - Project Workshop Sheet B and discuss
3 - Project slides and identify sites in student neighborhood previously photographed. Subjects include apartment buildings, public schools -primary and secondary, churches and burial sites. Compare similarities or differences of materials and natural form.

LESSON PLAN **TWO**

SUBJECT: Conservation & Restoration of Architecture - Secondary Education

ACTIVITY: **Architectural Criticism**

OBJECTIVE: To analyse similarities and differences among Egyptia Greek, and Roman architectural form.

WHAT IS THE LEAP TO "SLAVE LABOR ISSUES" ABOUT + WHY IN VOCABULARY

MOTIVATION: The discovery of the reasoning discerning how our ci evolved.

VOCABULARY: Construction materials - define limestone, mortar, granite block, terra-cotta, slave labor issues

MATERIALS: Workshop handouts on Language Arts and skills in constructing supportive arguments. Workshop on the six formal elements of design which will become the platform "language" of architectural criticism.

PROCEDURE:

1 - How might a glass block pyramid provide us with solar energy today?

2 - Contrast Roman decorative construction with austere Egyptian massive form.

3 - Has the need for individual, private homes or "public housing for the masses" minimized the requirements of grand cultural, central spaces of ancient city planners?

4 - Compare man-made and natural materials and their ability to function as decorative architectural form today.

SCHEDULE: This lesson could evolve into a term project from basic one or two period dialogue.

EVALUATION &
INTEGRATION: Class structure may divide into four co-op base groups, (see procedure) then report on their findings and inventiveness to the class during a two day period. Each cooperative base group could be evaluated by the following parameters:

A - Have the students critiqued their own work as they progressed?

B - Has their participation and presentation used appropriate architectural/artistic vocabulary?

LESSON PLAN: **THREE**

SUBJECT: Conservation & Restoration of Architecture - Secondary Education

WHAT DOES "AUGMENT THE RAMIFICATIONS OF JUDGMENTAL EXCHANGE MEAN?" IS THIS POSITIVE

ACTIVITY: **Aesthetics**

OBJECTIVE: To cultivate and appreciate differing interpretations of Classic Architecture .. and to recognize, analyze and evaluate *beauty*.

MOTIVATION: The basics of applying rudimentary judgement in matters of artistic values, based either consciously (*art elements*) or unconsciously. When a student begins the life long process of defining Beauty itself and can augment the ramifications of judgmental exchange, early adolescence has emerged from the dormant bud.

VOCABULARY: Appreciation of beauty, standards of a particular time, balance, harmony, "fashionable art", intrinsic beauty vs extrinsic beauty!

MATERIALS: Workshop handouts integrating Language Arts skill and Aesthetic judgement. Trade journal articles written by critics for writing style dialogue.

PROCEDURE:

1 - Prepare a reaction paper based on Materials handout discussion. The theme is FORM FOLLOWS FUNCTION.
2 - Choose a relief or three-dimensional sculpture based on humankind and argue the positive and negative symbolism at its' site.
3 - The "house of worship" is the epitome of a civiliztion's aesthetic values. True or false .. elaborate.

SCHEDULE: This lesson could evolve into a project based upon a single period of instruction.

EVALUATION &
INTEGRATION: Were we able to express informed opinions regarding the significance, value, and meaning of architectural aesthetics? Did the student broaden his/her understanding of discussing beauty?

LESSON PLAN **FOUR**

SUBJECT: Conservation & Restoration of Architecture
- Secondary Education

ACTIVITY: **Studio Planning**

OBJECTIVE: Utilizing previous knowledge gained through LESSON ONE, TWO, and THREE review, students will combine ancient and contemporary architectural concepts by sketching.

MOTIVATION: Examine the role of architects by creating primary level interior space or exterior structures. Projects are based upon Greco-Roman style and twenty first century imagination.

VOCABULARY: Studio lesson vacabulary based upon the formal elements of design - LINE, FORM, SPACE, COLOR, TEXTURE, & PATTERN. *Drafting vocabulary* would include drawing board, T-square, triangle, scale rule, mechanical pencil, lead sharpener, compass, divider, vellum, canary paper, APPLE/MAC, C.A.D., and software. *Drawing vocabulary* would include marker, graphite, stump, straight-edge, gum eraser, watercolor, pastels, and illustration board. *Model building vocabulary*: foam core, exacto knife, steel edge, and adhesives. *Printmaking vocabulary* plate, press, ink, deboss, and roller.

MATERIALS: Supplies listed above in VOCABULARY, LESSON ONE handouts, and 35mm transparencies of drawing styles.

PROCEDURE A: 1 - Compare basic drawings of Egyptian, Greek, and Roman housing and temples.

2 - Present a problem of reconstruction substituting 20th or 21st Century materials. How could capitals or columns

(1) THIS DISCUSSION SHOULD BE COUCHED IN THE SUBJECT OF SUBTITUTE MATERIALS + AUTHENTICITY

(2) DISCUSSION OF AUTHENTICITY IN ART DOES IT MATTER? HOW DO WE RELATE TO IT ORIGINAL VS. COPY/FORGERY

be contructed in high density urethane foam? might surfaces be designed as resistant to nat man-made decompsition?

3 - Combine the "old" and the "new" in the manner that architects problem solve in their profession.

4 - Rough on canary, should be followed by plan, section, and elevation drawings. Students may choose to free-hand sketch and follow-up with a rendering o structure created.

(3) WHY IS THE ORIGINAL ART WORK MORE "VALUABLE" THAN A COPY

PROCEDURE B: Contrast *basic* form and space, and construct foam models of ideas presented in Procedure A.

PROCEDURE C: Construct cornice trim or pattern tiles using basic printmaking techniques.

SCHEDULE: One to three weeks, 5 periods each week for Procedure A; one week for Procedures B and C.

EVALUATION & INTEGRATION: Has the studio-based creative experience allowed for group exchange, cooperative education technique, and presentation of final projects? Have projects been displayed formally to other high school classes?

APPENDIX2 C(3)

LESSON PLAN **FIVE**

SUBJECT: Conservation & Restoration of Architecture
- Secondary Education

ACTIVITY: **Contrasts of Contemporary Construction**

OBJECTIVE: This final series lesson should examine twentieth century material and structures, and align their significance with our historic past.

MOTIVATION: An initial incentive class trip to New York City modern architectural masterpieces will arouse and sustain energy. I.E. - CITICORP BUILDING, GUGGENHEIM MUSEUM, & various hotels.

VOCABULARY: Span, truss, triangulation, grid, steel/reinforced concrete, glass, thermo-plastic resin, thermo-formed plastic, carbon fibre, convexity, concavity.

MATERIALS: Slides and Worksheets reviewing masters of 20th century architecture - Sarrinen, Sullivan, Wright, Pei, Rudolph, Breyer & Johnson.

PROCEDURE:

1 - Report/visuals discussing contemporary architectural materials or concepts copmbined with past historic beauty and decor.

2 - How might plastics have created new form and space if they were prevelant two or four thousand years ago? (use visuals also)

3 - Why is restoration and conservation of our landmarks an important socio-economic issue?

SCHEDULE: Following the class trip, one period of reference discussion and show, three periods for suggestions on procedure, and five periods devoted to actual sketching and writing.

EVALUATION & INTEGRATION: Were students able to conceive an idea, select a process, and execute their creative energy in two or three dimensions? Can the student of conservation relate symbolic information or recognize new areas of endeavor, such as industrial design, through their search and inquiry process?

HOW ARE THEY BEING ASKED TO RELATE THESE ENDEAVORS

APPENDIX 2 C (3)

The Visual Elements of ART

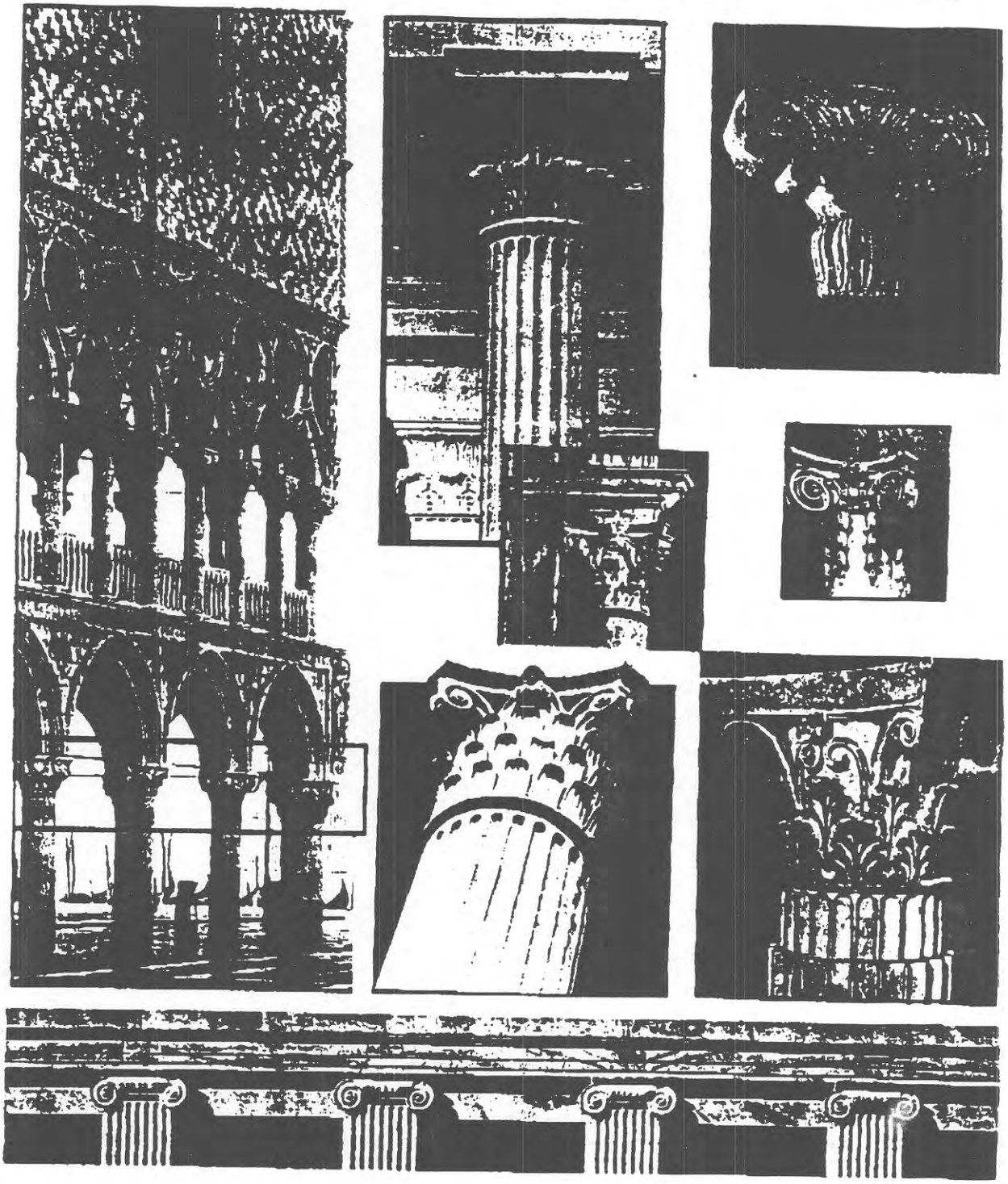
GROUP 2

LINE | FORM | SPACE | COLOR | TEXTURE | PATTERN

INTRODUCTION TO ART - CLASSWORK/HOMEWORK

NAME: DATE:

CLASS: PERIOD:



The Visual Elements of ART

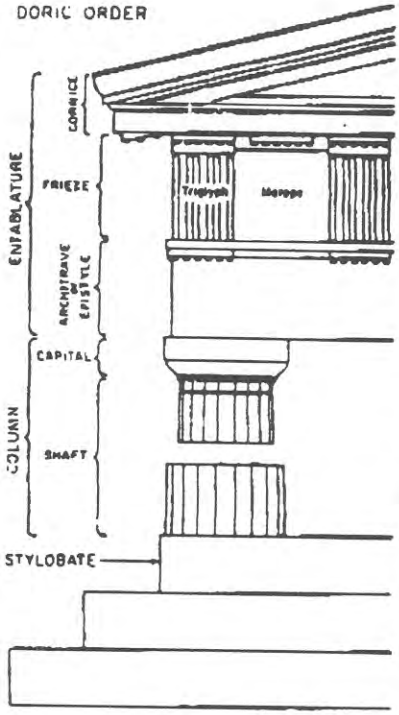
B GROUP 2

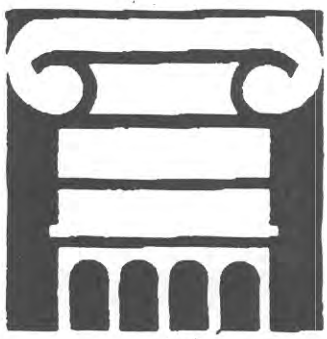
LINE	FORM	SPACE	COLOR	TEXTURE	PATTERN

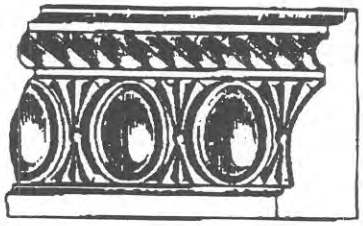
INTRODUCTION TO ART - CLASSWORK/HOMEWORK

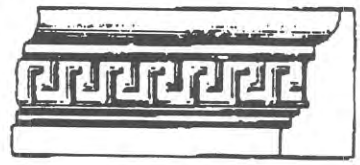
NAME: DATE:

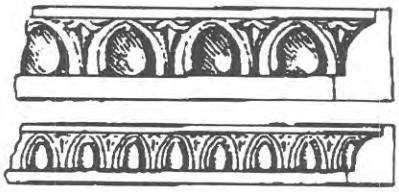
CLASS: PERIOD:

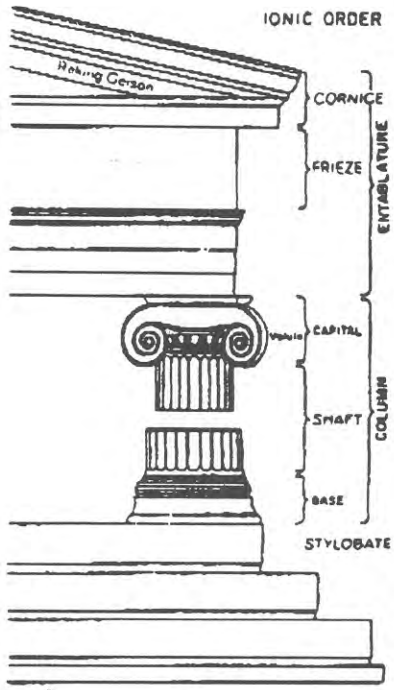












The Visual Elements of ART

C GROUP 2

LINE	FORM	SPACE	COLOR	TEXTURE	PATTERN

INTRODUCTION TO ART - CLASSWORK/HOMEWORK

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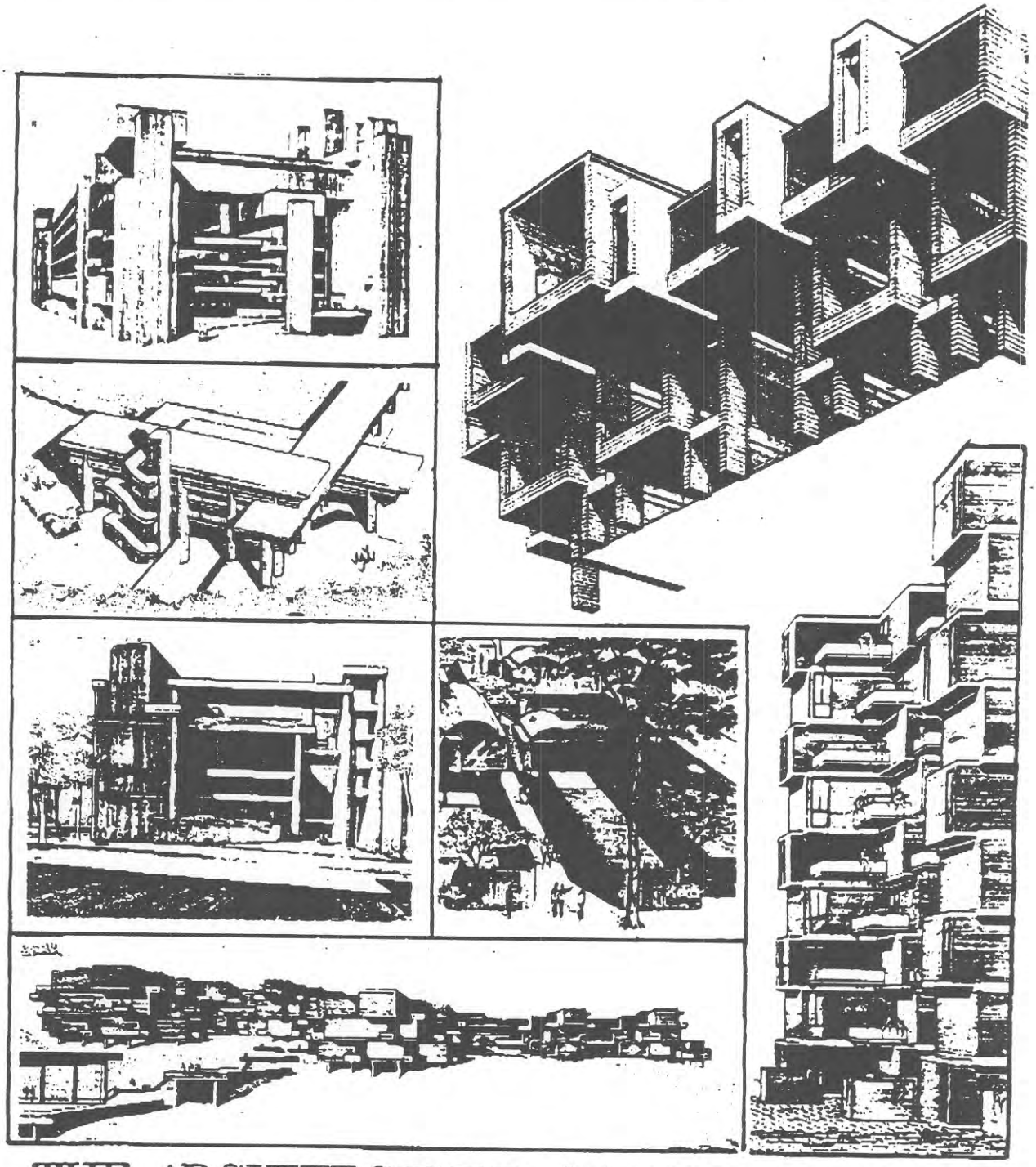


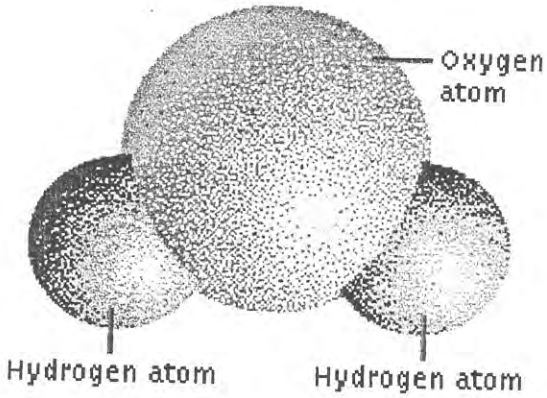
THE ARCHITECTURE OF PAUL RUDOLPH

Flight Schedule for
AIRTRANS & BUSINESS

Science Curriculum Development for the Proposed <u>High School for the Preservation Arts</u>

Plan #1: Water: Phase Changes are Physical Changes

developed by Kieran J. McGuire, Science Teacher
at The High School for Arts & Business
in Corona, Queens, New York City.



<u>Objective</u>: Students will understand Kinetic Theory and the physical behavior of H_20 as it freezes. This understanding will be reflected in an accuracy rate of 85% or higher on all assessments.

<u>Motivation</u>: Water is the prime vehicle for physical weathering. An understanding of water's physical phases in essential to an understanding of the physical processes involved in building or monument degradation.

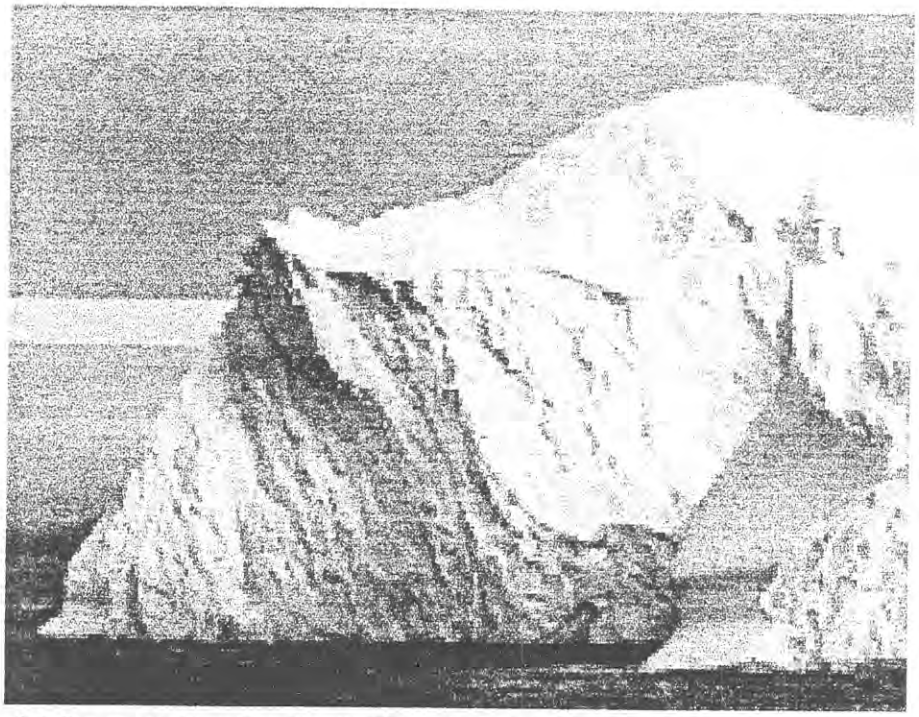
<u>Content</u>: One very important property of water is that it expands upon freezing. At 0° C it has specific gravity 0.9168 as compared to specific gravity 0.9998 of water at the same temperature. As a result, ice floats in water. The expansion of water when it freezes has important geological effects. Water that enters minute cracks in rocks on the surface of the earth creates an enormous amount of pressure when it freezes, and splits or breaks the rocks. This action of ice plays a great part in erosion.

<u>Application</u>: As water will push apart rocks as it freezes and expands, so will it push apart building stones if allowed to penetrate joints.

Experiment: Set two rectangular stones (Belgian blocks) at a distance approximately two (2) millimeters apart from each other. Apply white silicon caulking to the outer portion of three sides of the joint. Allow to dry for twenty-four (24) hours. Carefully and simultaneously turn over both stones, making certain not to break the caulk seal. Fill the joint with water. Remeasure the joint distance. Freeze for twenty-four (24) hours.
Remeasure joint distance. Calculate percent expansion. Redo experiment using the new, wider distance as a starting distance. Reiteration will allow the students to observe the effects of the freeze-thaw cycle.

Assessment (i): Pipes Burst in Winter: Why does a water pipe burst when it freezes? What steps might you take to prevent this from happening? Answer: A pipe bursts because of the difference in space occupied by liquid and solid water. Prevention includes emptying pipes before freezing, warming them above freezing, and developing a flexible kind of pipe.
Assessment (ii): Expansion of Freezing Water: In cold climates cement sidewalks sometimes upheave when the temperatures are well below the freezing point of water. Explain why this happens. Answer: Upheavals result from the difference in space occupied by liquid and solid water. The water in the earth below the cement is expanding as it changes to a solid.

Summary: Present pictures of Bear Stearns building on Park Avenue, from which a brick, this past summer, fell thirty (30) or more stories onto and through the roof of a bus. Instruct students as to how material loosened during freeze thaw cycles may not actually fall until disturbed by wind or creatures during the following summer.



Homework with Segue to Ensuing Topic (Density): Ice Floats: Devise an experiment that would help you determine the percentage of a floating ice cube that is above the water. Does the shape of the ice cube make a difference? Explain.

1) Does it matter whether the measurements are of mass or volume?

2) How would the numbers be different if a large iceberg was considered rather than a small ice cube?

Possible Answer and Materials:
beakers (small); graduated cylinder (small, that might or might not be large enough to hold the ice cube); plastic rulers (small); water; ice cubes of various shapes; tape and string for markers; modeling clay (smart students might think of modeling parts above and below and then measuring the model, since it won't melt); balance

.

Students should devise ethods of measurement of the displacement of the ice cube in order to measure dimensions of the parts above and below water and calculate volumes.

Since the cube has uniform density, it shouldn't matter whether percentage by mass or by volume is determined or what the overall shape is. The percentage for an iceberg should be the same as that for an ice cube.

K.J. McGuire 1998

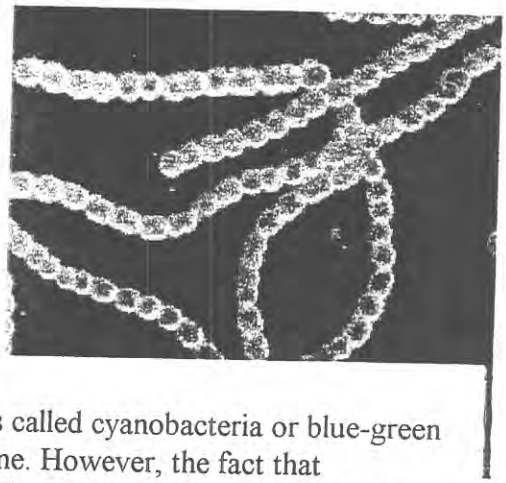
Science Curriculum Development for the Proposed
High School for the Preservation Arts

Plan # 2: Algae Dammed Weepholes: A Crying Shame.

Objective: Students will understand the life functions and cycle of algae. Students will understand and be able to identify the differences between procaryotic and eucaryotic cells.

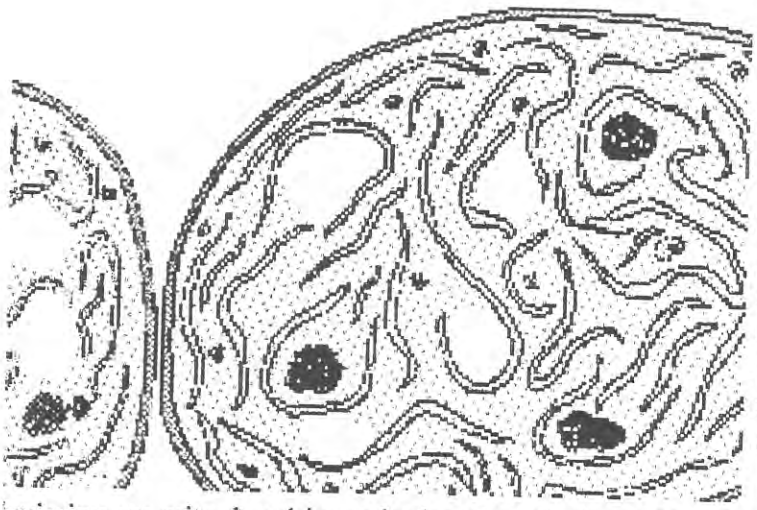
Motivation: The growth of algae in drainage ports of structures blocks effective drainage, necessitating regular maintenance schedules. An understanding of how and where such algae forms increases efficiency of building design and of maintenance schedule.

Blue-Green Algae
The filamentous blue-green algae of the phylum Cyanophyta represent the most primitive group of living plants. Extremely simple plants, they can exist as single cells, as slender filaments, or as simple colonies. Blue-green algae are capable of enduring a wide variety of environmental conditions ranging from freshwater and marine habitats to snowfields and glaciers. They are capable of surviving and flourishing even at extremely high temperatures.



Content: Blue-green algae, or cyanophytes, are sometimes called cyanobacteria or blue-green bacteria because, like bacteria, they lack a nuclear membrane. However, the fact that cyanophytes carry out oxygen-evolving photosynthesis similar to higher plants supports their classification as algae, not bacteria. Their color varies from blue-green to red or purple and is determined by the proportions of two special photosynthetic pigments, c-phycocyanin (blue) and c-phycoerythrin (red), which tend to mask the chlorophyll. While higher plants have two kinds of chlorophyll called a and b, cyanophytes contain only chlorophyll a. They reproduce by binary fission, production and germination of spores, or breakage of multicellular filaments. Like bacteria, cyanophytes are nearly everywhere, occurring in typical aquatic and terrestrial habitats as well as in such extreme sites as hot springs (at temperatures up to 73° C, or 160° F) and crevices of desert rocks. Fossils believed to represent cyanophytes are found in rocks 2.5 to 2.8 billion years old. Cyanophytes were probably responsible for the accumulation of oxygen in the primeval atmosphere and the formation of concentrically laminated reeflike structures called stromatolites, which continue to be formed (as at Shark Bay, Western Australia) by the cementing of sediments with calcium carbonate.

Some freshwater planktonic forms of blue-green algae, which occur in massive quantities called blooms under favorable conditions, produce toxins that can kill livestock. Some forms are nitrogen-fixing and thus enrich the habitats where they grow, such as rice paddies. Spirulina, one form of blue-green algae and a traditional food in parts of Mexico and central Africa, is grown commercially and marketed as a high-protein dietary supplement.

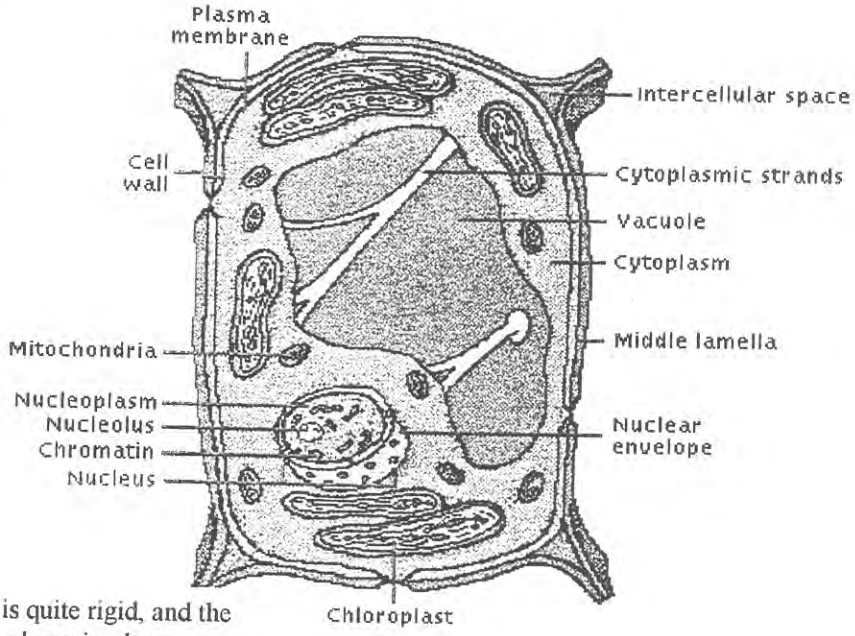


Procaryote: Cyanobacterium Anabaena Azollae

Bacteria and other procaryotic cells generally lack many of the internal structures of eucaryotic cells. For example, while the cytoplasm of procaryotic cells is surrounded by both a cell wall and a plasma membrane (as in plants), there is no nuclear membrane and, therefore, no distinct nucleus. Instead, circular molecules of DNA are in direct contact with the cytoplasm. Also missing are mitochondria, endoplasmic reticulum, chloroplasts, and Golgi complex. Although in general no membrane-bound internal structures exist in procaryotes, cyanobacteria such as the one illustrated here do contain numerous membranes called thylakoids that, supporting chlorophyll and photosynthetic pigments, synthesize energy from sunlight.

Eucaryote: Plant Cell

Plant cells, like animal cells, show a high degree of organization with membrane-bound internal structures. The nuclear envelope forms a barrier between the chromatin (genetic material) and cytoplasm of the cell. Convoluted mitochondria convert nutrients into energy the plant can use. Unlike animal cells, however, plant cells also contain chloroplasts, organelles capable of synthesizing energy from sunlight. Further differences include the cell wall, which contains cellulose and is quite rigid, and the fluid-filled vacuole, single and quite large in plants.



Assessment: Under what conditions are algae prone to grow? Is there a design geometry for small-bore drainage systems (weepholes) which will diminish algal growth? Is algal growth seasonal? dependant upon temperature as well as moisture?

Lab Assignments: Design and carry out an experiment to determine the effects of (i) limiting sunlight, (ii) various temperatures, imitating seasons of the Northeast, and (iii) humidity on the growth rate of algae. Compare and contrast your results to your hypotheses.

Kieran J. McGuire 1998

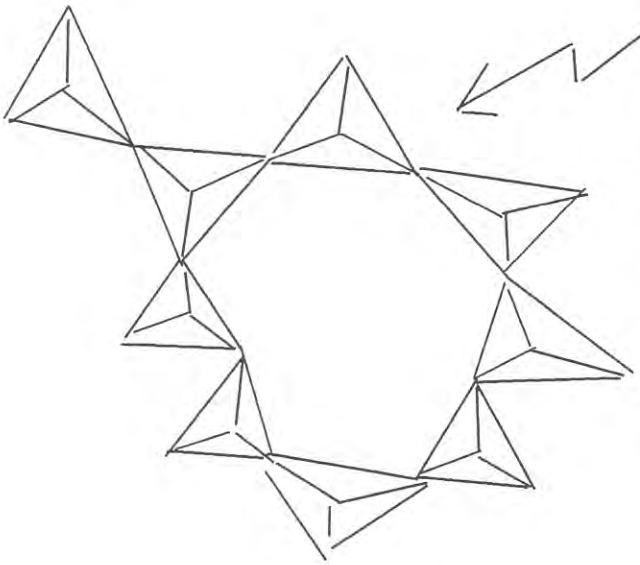
Science Curriculum Development for the Proposed Preservation Arts High School

Plan #3: Swelling of Clay Minerals and the Effect on *Terra Cotta*

Objective: Students will demonstrate an understanding of the structure of clay minerals, the mechanism of water infiltration into clay materials, and the subsequent effect on building materials.

Motivation: To understand why the *facade* of the Woolworth Building, a grand structure and once the tallest building in the world, is at risk.

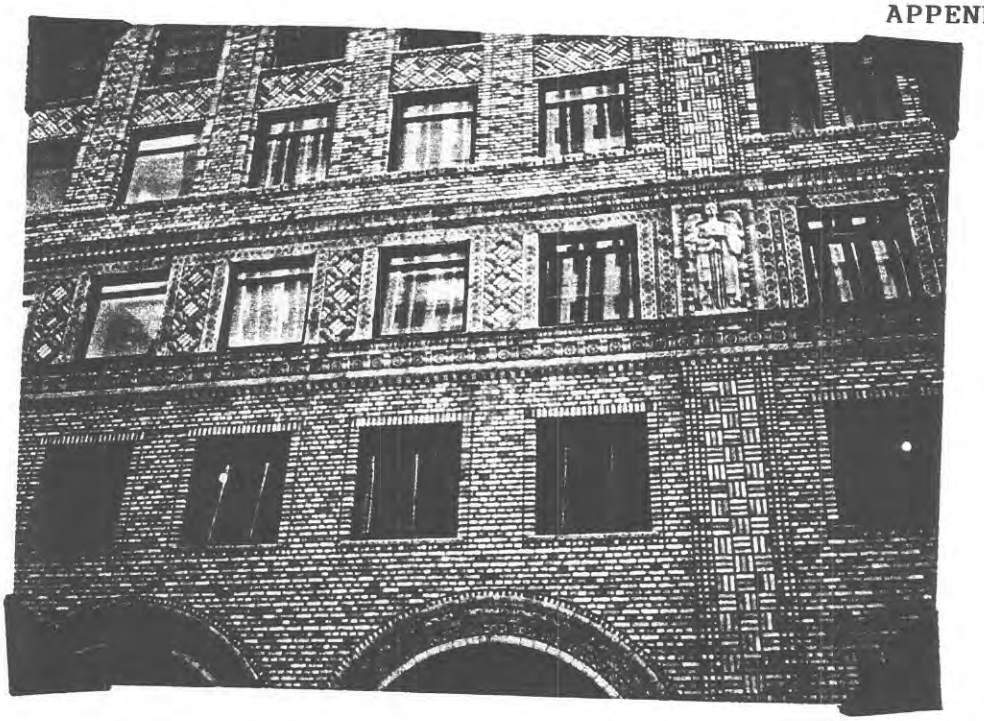
Content: Clay, earth or soil that is plastic and tenacious when moist and that becomes permanently hard when baked or fired. Of widespread importance in industry, clays consist of a group of hydrous alumino-silicate minerals formed by the weathering of feldspathic rocks, such as granite. Individual mineral grains are microscopic in size and shaped like flakes. This makes their aggregate surface area much greater than their thickness and allows them to take up large amounts of water by adhesion, giving them plasticity and causing some varieties to swell. Common clay is a mixture of kaolin, or china clay (hydrated clay), and the fine powder of some feldspathic mineral that is anhydrous (without water) and not decomposed. Clays vary in plasticity, all being more or less malleable and capable of being molded into any form when moistened with water. The plastic clays are used for making pottery of all kinds, bricks and tiles, tobacco pipes, firebricks, and other products. The commoner varieties of clay and clay rocks are china clay, or kaolin; pipe clay, similar to kaolin, but containing a larger percentage of silica; potter's clay, not as pure as pipe clay; sculptor's clay, or modeling clay, a fine potter's clay, sometimes mixed with fine sand; brick clay, an admixture of clay and sand with some ferruginous (iron-containing) matter; fire clay, containing little or no lime, alkaline earth, or iron (which act as fluxes), and hence infusible or highly refractory; shale; loam; and marl.



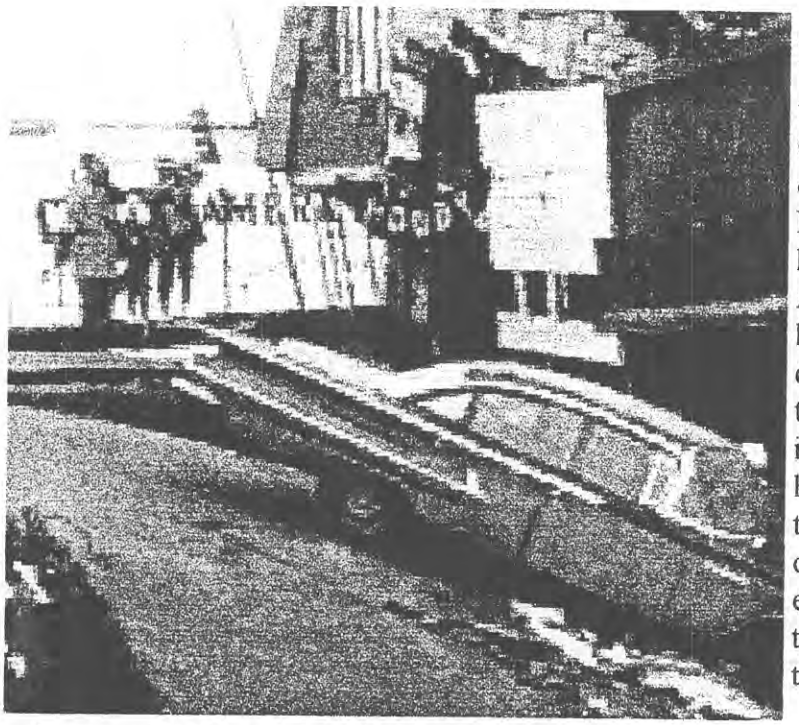
Drawing of a ring of silica tetrahedra. Each corner represents an Oxygen atom; each tetrahedron has a silicon atom centered within it.

Silica tetrahedra arranged in planar sheets are known as **cyclosilicates**. Many clay mineral have lattice structures so arranged.

Note the large interstitial void, which is a site for metal ions or water molecules. Water molecules so placed are not chemically bonded to the tetrahedra; such water is migratory.



Terra-Cotta is fired earthenware, composed largely of clay minerals, of a gray, buff, or reddish color. *Terra-cotta* has been used since prehistoric times to make sculptures and figurines, vases, tiles, and bricks. The most notable *terra-cottas* of antiquity were the large sculptures and sarcophagi of the Etruscans; the Greeks and Romans mass-produced *terra-cotta* objects for architectural decoration. This same decoration can be seen in the photographs of the *terra cotta* angels on the *facade* of the Pershing Square Building (above) at the corner of Park Avenue and 42nd Street, across from Grand Central Terminal. Note also the *terra cotta* decorative lower *facade* of the art-deco Chanin building (pictured below), next door to the Pershing Square Building and diagonally across from the Chrysler Building. Both buildings are at least seventy (70) years old; the *terra cotta* has been maintained free from water infiltration.

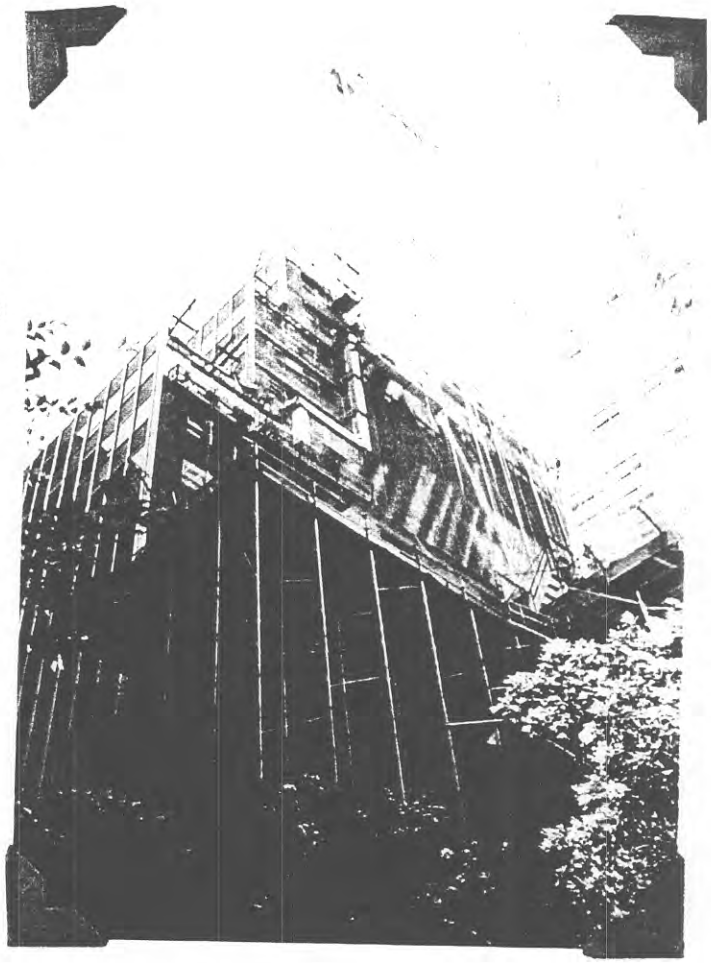


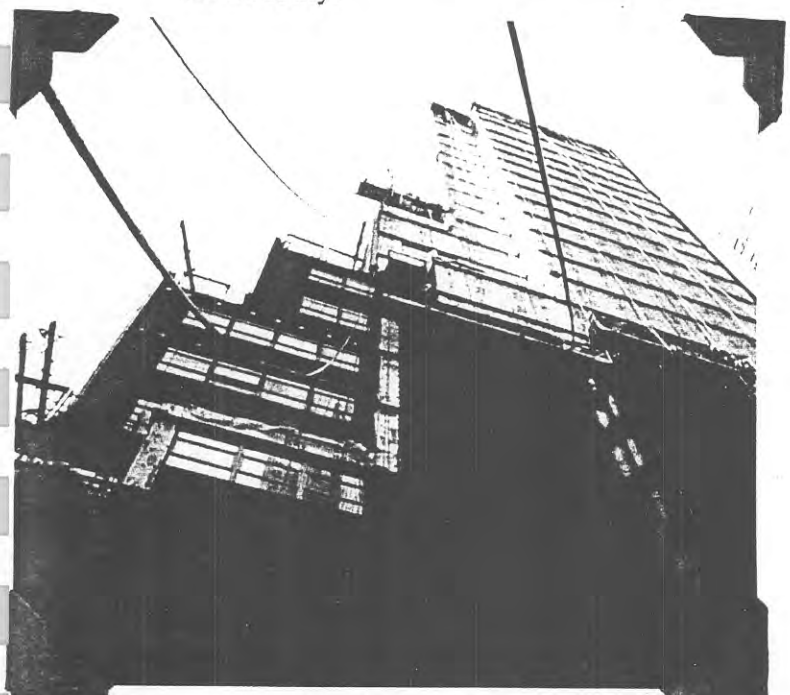
Alaskan Earthquake
The Alaskan earthquake of 1964 was rated 9.2 on the Richter scale. One of the most powerful earthquakes ever known to hit North America, it claimed 131 lives and devastated parts of Anchorage and Valdez. The quake liquefied wide-ranging clay deposits and left gaping cracks in the cement of this street. The interstitial water which had been held between groups of silica tetrahedra within the clay minerals of the soil was expelled by the earthquake, causing the ground to turn into a pudding-like substance to a depth of many feet.

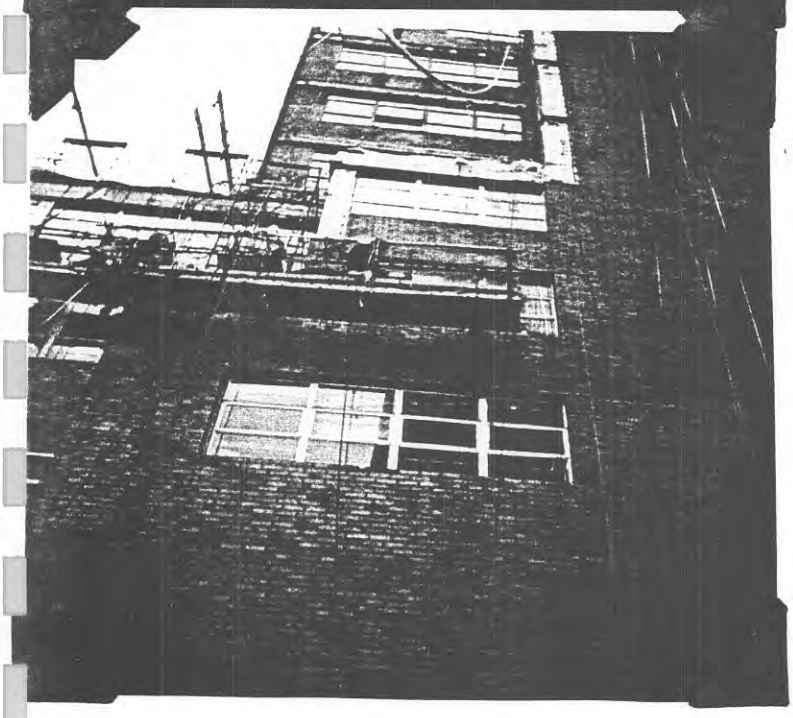
Assessment: Provide strudents with portions of modelling clay which has been sun or oven dried. Ask them to weigh the samples, recording their answers. Instruct students to put clay samples in water overnight. The next day, remove, dry with paper towels, and re-weigh the samples After manual manipulation of the samples, reworking the clay, again place them in water overnight. Repeat paper drying and weighing the next day. Have students calculate the difference in mass, both in absolute terms and in percent increases. Ask students to explain their experimental results, using diagrams and at least one outside reference.
Summarizing Activity: Reminding students of the density of water, ask them to estimate a possible volumetric change in the hydrated clay.Have the students design and conduct an experiment to measure the actual volumetric change, absolute and in percent. Remember to leave sufficient dried clay for this step. Explain that the expected volume change is greater than the experimental because the water is received by the clay *interstitially*, but that there is nonetheless, a real volume increase.

Homework: Have students find and bring in pictures of the Woolworth Building. Sources include library architectural books, the internet, or a visit with a camera. Review pictures of the Woolworth Building, discussing swelling and contraction of hydrated *terra cotta*. Pass around the pictures included below, which are of 207 East 41st Street, between 2nd and 3rd Avenues in New York. Explain how the exterior wall of this particular building had been compromised by water infiltration; each brick had had to be removed by hand. Steel supports were installed on each of 40-odd floors to segregate the load by floor. The pictures show the re-bricking in progress, consisting of approximately 750,000 bricks at a cost of several million dollars. Emphasize the need for integrity against water infiltration when using absorbent building materials. Assign extra credit to any student who researches and reports on the systematic *facade* self-inspections periodically required of mid-town Manhattan buildings.

Pictures of 207 East 41st Street, NY, NY.
At right, view from the ground of extensive brick *facade* replacement project, Summer, 1998.
The platform which holds construction equipment and from which the masons organize their labors is seven stories high. The lower scaffolding is an nine stories higher, at the top of the shady portion of the building. The upper scaffolding is at the top, in the sunny portion of the building. It is the east wall of the building which is being reclad. Steel has been set into the frame of each floor of the building, in order to lessen the bearing load on the masonry.







At left, views of the wall under construction from the staging platform, seven stories high.

Top left views the upper floors, clad in new foam insulation with a moisture barrier, to keep in moisture from warm air *inside* the building. When warm, moist air hits a cold, exterior wall, a dew forms on the inside of the mortar bed attaching the brick to the wall. A moisture barrier prevents this. How could such a moisture barrier be retrofit into the Woolworth Building without first removing the entire *terra cotta facade*?

Bottom left, new brickwork on floors 10 through fourteen, from the same vantage point as above. Note the expansion joints installed every twenty-odd courses. These joints will be filled with an elastic sealant.

1998 K.J. McGuire

Curriculum Development for the Proposed
High School for the Preservation Arts
Plan # 4: Alkalinity and the Carbonate System

Objective: Students will become familiar with the hydroxide - carbonate system in natural waters and caves, water systems, and waters migrating through poorly bonded cements, and be able to explain this system in all assessments.

Motivation: The acid neutralizing capability of natural waters is usually determined by the dissolved hydroxides and carbonates in solution. This system is significant in all waters encountered in environmental engineering practice. Typical practical application of these principles involves scale formations on mortared brickwork and in water distribution lines (especially those for hot water), corrosion, and acid waste neutralization.

Content: Basically any acid or base is neutralized by accepting all the hydroxide or hydrogen ions it possibly can. In natural systems this involves the carbonate system because of the CO_2 gas in our atmosphere, the carbonate minerals in aquicludes, and the hydrogen ion contributed by the dissociation of water.

The carbonate system involves several chemical reactions. Some of these are:

Reaction (1) $H_2O + CO_2 = H_2CO_3(aq)$

(2) $CO_2(aq) + H_2CO_3 = HCO_3^-$

(3) $H_2CO_3 = H^+ + HCO_3^-$

(4) $HCO_3^- = H^+ + CO_3^{2-}$

(5) $H_2O = OH^- + H^+$

It is important to realize that CO_2 gas dissolved in water exists as aqueous carbonic acid, H_2CO_3 (aq). However, since H_2CO_3 is such a small fraction of total CO_2 acidity, a more convenient term $H_2CO_3^-$ is utilized to denote the combination of H_2CO_3 and CO_2 (aq). As shown from equations 3 and 4, H_2CO_3 is diprotic acid and contributes two protons that require neutralization. If only the carbonate system is considered in water, the total alkalinity can be expressed as:

(6) $Alk = 2[CO_3^{2-}] + [HCO_3^-] + [OH^-] - [H^+]$

This equation is arrived at by a mass balance based on electro-neutrality and is defined as the acid neutralizing capability of the carbonate system.

Mortar is a mixture of lime or cement with sand and water, used as a binding material for bricks and stone and as a plaster. Lime mortar consists of sand, water, and slaked lime ($Ca(OH)_2$), a white solid produced when lime ($CaCo_3$) reacts with water. Usually one part by volume of slaked lime is used for every three or four parts by volume

of sand; enough water is added to make a paste. When exposed to the atmosphere the paste hardens as the result of absorption of carbon dioxide. It does not harden under water and is not as strong as cement mortar. The best type of cement mortar is a mixture of portland cement, sand, water, and a small amount of lime.

Cements set, or harden, by the evaporation of the plasticizing liquid such as water, alcohol, or oil, by internal chemical change, by hydration, or by the growth of interlacing sets of crystals. Other cements harden as they react with the oxygen or carbon dioxide in the atmosphere. Typical portland cements are mixtures of tricalcium silicate ($3CaO \cdot SiO2$), tricalcium aluminate ($3CaO \cdot Al2O3$), and dicalcium silicate ($2CaO \cdot SiO2$), in varying proportions, together with small amounts of magnesium and iron compounds. Gypsum is often added to slow the hardening process.

These active compounds in cement are unstable, and when water is added they rearrange their structure. The initial hardening of the cement is caused by the hydration of tricalcium silicate, which forms jellylike hydrated silica and calcium hydroxide. These substances ultimately crystallize and bind together the particles of sand or stone, which are always included in a mortar or concrete mixture, into a hard mass. Tricalcium aluminate acts in the same way to produce the initial set, but does not contribute to the ultimate hardening of the mixture. The hydration of dicalcium silicate proceeds similarly but far more slowly, hardening gradually over a period of years. The process of hydration and setting of a cement mixture is known as curing; during this period heat is evolved.

Concrete mixtures are usually specified in terms of the dry-volume ratios of cement, sand, and coarse aggregates used. A 1:2:3 mixture, for instance, consists of one part by volume of cement, two parts of sand, and three parts of coarse aggregate. Depending on the applications, the proportions of the ingredients in the concrete can be altered to produce specific changes in its properties, particularly strength and durability. The ratios can vary from 1:2:3 to 1:2:4 and 1:3:5. The amount of water added to these mixtures is about 1 to 1.5 times the volume of the cement. For high-strength concrete, the water content is kept low, with just enough water added to wet the entire mixture. In general, the more water in a concrete mix, the easier it is to work with, but the weaker the hardened concrete. Poorly bonded cement may result from improper ratios of cement, sand and gravel, incomplete mixing, or too much water. Migration of natural waters through poorly bonded cements results in scale ($CaCO_3$) formations which must be removed by application of acids.

Assessment and Summary: Ask students to list the first five equations listed above, as a memory drill. Ask students to diagram several Calcium and Carbonate ions from the formation of a cement to the formation of scale as water migrates through a poorly bonded cement. Remind students of the equilibrium between the concentration of CO_2 gas in the atmosphere and aqueous H_2CO_3.

Homework: Ask students to locate and list sites of obvious scale formation which indicate poorly bonded cements.

K.J. McGuire 1998

Curriculum Development for the Proposed
High School for the Preservation Arts
Plan # 4: Alkalinity and the Carbonate System

Objective: Students will become familiar with the hydroxide - carbonate system in natural waters and caves, water systems, and waters migrating through poorly bonded cements, and be able to explain this system in all assessments.

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Mortar is a mixture of lime or cement with sand and water, used as a binding material for bricks and stone and as a plaster. Lime mortar consists of sand, water, and slaked lime ($Ca(OH)_2$), a white solid produced when lime ($CaCo_3$) reacts with water. Usually one part by volume of slaked lime is used for every three or four parts by volume

of sand; enough water is added to make a paste. When exposed to the atmosphere the paste hardens as the result of absorption of carbon dioxide. It does not harden under water and is not as strong as cement mortar. The best type of cement mortar is a mixture of portland cement, sand, water, and a small amount of lime.

Cements set, or harden, by the evaporation of the plasticizing liquid such as water, alcohol, or oil, by internal chemical change, by hydration, or by the growth of interlacing sets of crystals. Other cements harden as they react with the oxygen or carbon dioxide in the atmosphere. Typical portland cements are mixtures of tricalcium silicate ($3CaO \cdot SiO2$), tricalcium aluminate ($3CaO \cdot Al2O3$), and dicalcium silicate ($2CaO \cdot SiO2$), in varying proportions, together with small amounts of magnesium and iron compounds. Gypsum is often added to slow the hardening process.

These active compounds in cement are unstable, and when water is added they rearrange their structure. The initial hardening of the cement is caused by the hydration of tricalcium silicate, which forms jellylike hydrated silica and calcium hydroxide. These substances ultimately crystallize and bind together the particles of sand or stone, which are always included in a mortar or concrete mixture, into a hard mass. Tricalcium aluminate acts in the same way to produce the initial set, but does not contribute to the ultimate hardening of the mixture. The hydration of dicalcium silicate proceeds similarly but far more slowly, hardening gradually over a period of years. The process of hydration and setting of a cement mixture is known as curing; during this period heat is evolved.

Concrete mixtures are usually specified in terms of the dry-volume ratios of cement, sand, and coarse aggregates used. A 1:2:3 mixture, for instance, consists of one part by volume of cement, two parts of sand, and three parts of coarse aggregate. Depending on the applications, the proportions of the ingredients in the concrete can be altered to produce specific changes in its properties, particularly strength and durability. The ratios can vary from 1:2:3 to 1:2:4 and 1:3:5. The amount of water added to these mixtures is about 1 to 1.5 times the volume of the cement. For high-strength concrete, the water content is kept low, with just enough water added to wet the entire mixture. In general, the more water in a concrete mix, the easier it is to work with, but the weaker the hardened concrete. Poorly bonded cement may result from improper ratios of cement, sand and gravel, incomplete mixing, or too much water. Migration of natural waters through poorly bonded cements results in scale ($CaCO_3$) formations which must be removed by application of acids.

Assessment and Summary: Ask students to list the first five equations listed above, as a memory drill. Ask students to diagram several Calcium and Carbonate ions from the formation of a cement to the formation of scale as water migrates through a poorly bonded cement. Remind students of the equilibrium between the concentration of CO_2 gas in the atmosphere and aqueous H_2CO_3.

Homework: Ask students to locate and list sites of obvious scale formation which indicate poorly bonded cements.

Curriculum Development for the Proposed
High School for the Preservation Arts
Plan # 4: Alkalinity and the Carbonate System

Objective: Students will become familiar with the hydroxide - carbonate system in natural waters and caves, water systems, and waters migrating through poorly bonded cements, and be able to explain this system in all assessments.

Motivation: The acid neutralizing capability of natural waters is usually determined by the dissolved hydroxides and carbonates in solution. This system is significant in all waters encountered in environmental engineering practice. Typical practical application of these principles involves scale formations on mortared brickwork and in water distribution lines (especially those for hot water), corrosion, and acid waste neutralization.

Content: Basically any acid or base is neutralized by accepting all the hydroxide or hydrogen ions it possibly can. In natural systems this involves the carbonate system because of the CO_2 gas in our atmosphere, the carbonate minerals in aquicludes, and the hydrogen ion contributed by the dissociation of water.

The carbonate system involves several chemical reactions. Some of these are:

Reaction (1) $H_2O + CO_2 = H_2CO_3(aq)$

(2) $CO_2(aq) + H_2CO_3 = HCO_3^-$

(3) $H_2CO_3 = H^+ + HCO_3^-$

(4) $HCO_3^- = H^+ + CO_3^{2-}$

(5) $H_2O = OH^- + H^+$

It is important to realize that CO_2 gas dissolved in water exists as aqueous carbonic acid, H_2CO_3 (aq). However, since H_2CO_3 is such a small fraction of total CO_2 acidity, a more convenient term $H_2CO_3^-$ is utilized to denote the combination of H_2CO_3 and CO_2 (aq). As shown from equations 3 and 4, H_2CO_3 is diprotic acid and contributes two protons that require neutralization. If only the carbonate system is considered in water, the total alkalinity can be expressed as:

(6) $Alk = 2[CO_3^{2-}] + [HCO_3^-] + [OH^-] - [H^+]$

This equation is arrived at by a mass balance based on electro-neutrality and is defined as the acid neutralizing capability of the carbonate system.

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Homework: Ask students to locate and list sites of obvious scale formation which indicate poorly bonded cements.

K.J. McGuire 1998

NJIT
New Jersey Institute of Technology

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CENTER FOR ARCHITECTURE AND BUILDING SCIENCE RESEARCH

To: Stephen Drakes, Principal High School of Arts and Business (HSAB)
From, Kate Burns Ottavino, Center for Architecture and Building Science Research Center
Re: Historic Preservation Curriculum grades 9 through 12
Date April 29, 1999

This letter is a summary of our last meeting at the HSAB on Friday, April 16. Ruth Baker of the NJIT Center and I met with the new History teacher David Moyal, Lynda Aron (Language Arts), Bryan Serra (Art) and Kieran McGuire (Science). The purpose of the meeting was to review the edits made by the NJIT Center to the teachers' lesson plans developed during the Summer of 1998; to discuss interdisciplinary student assessment projects; and to schedule the actual days for teaching in the Spring and Fall of 1999.

Three significant issues were raised at our meeting;

1) The new history teacher, David Moyal, would like to prepare his own lesson plans based upon our discussion rather than implement those of Kevin Lawlor, who will not be at the HSAB this year.

2) The scheduling of *"block"* classes that would enable 15 or more students from each grade to receive instruction in four subject areas is problematic.

3) In order for interdisciplinary student assessment projects to be facilitated, thematic coordination of the four disciplines via a specific local site is considered to be most effective.

Recommendations for addressing these issues are as follows:

4) The Worlds Fair Grounds was suggested as the thematic site. It is considered to be both practical and diversified and will provide ample latitude for study by all four grades and subjects.

5) The history teacher, David Moyal expressed interest in working with one site to develop history lesson plans. Future teacher development sessions with David should be scheduled, at his convenience, to facilitate his lesson plan development.

6) Teaching of all four years classes and subjects should be postponed to the Fall of 1999 to facilitate a "block" schedule for the students. The reason for this recommendation by the group was that the effectiveness of an interdisciplinary integrated curriculum could not be properly assessed if the students from each year are not exposed to each of the four disciplines being taught.

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As a follow up to our meeting with the teachers, we met with you and you proposed the following solutions to the issues discussed above:

7) To facilitate "block" scheduling for all four years, courses should be taught in one day. This will enable the teachers to rotate among the four years.

8) To enable 15 students from each grade level to participate, the classes should be held on a Saturday.

9) Suggestions were then generated for stimulating student participation including:

- Hold classes at the Queens Art Museum in Corona Park (Worlds Fair Building) [Tentative date: Saturday, October 2, 1999 - Time TBD. The normal operating hours of the museum are 12:00 p.m. - 2:00 p.m. on Saturday.]
  The NJIT Center has followed up preliminarily with Sharon Vatsky, Curator of Education, Queens Art Museum. She is also willing to provide time during normal weekday hours for teacher development specifically about the Worlds Fair Grounds.

- Conduct a T-Shirt design contest with the winning design announced on the day of the program. All students who attend, would receive a T-shirt with the winning design printed on it. NJIT Center to research costs and potential underwriters

- Press coverage. NJIT Center will make inquiries.

- Breakfast and lunch to be provided by the HSAB

- NJIT Center will issue a certificate of participation to each of the student participants

- A "significant" person will be invited to introduce the day and the theme.

This all sounds very promising. After you receive this note, perhaps we could schedule a meeting again at the high school, or we can just talk on the phone to decide on a plan of action. Then we can start to organize this year's planned curriculum development/ implementation around the above program.

On another note, enclosed are the edits to the Language Arts Lessons. They lessons are very good and I would appreciate it, if Lynda agrees, if you would be good enough to distribute the edits to the four teachers. If they read the lessons with the edits and pay particular attention to the assessment projects, I think that we will be well on our way to realizing the day's deliverance of each year's lesson. I look forward to hearing from you and the teachers. I really think that this portion of the project is moving along very well. As always, it is a pleasure to work with you and your teachers.

Best,

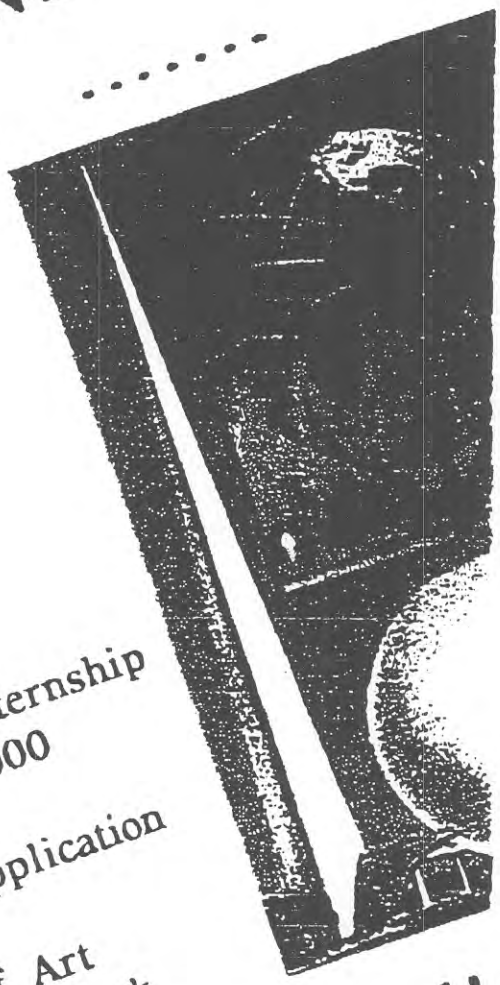
Kate

Kate Burns Ottavino, Director
Preservation Technology

Reserve your space NOW!

PRESERVE THE PAST
MAINTAIN THE PRESENT
ENSURE THE FUTURE .....

by attending a Video Presentation
Thursday, September 16, 1999
2:20 p.m. Student Cafeteria



When:
Saturday, October 2, 1999

Why:
-Fun
-History
-Culture
-Opportunity for a paid internship during the Summer of 2000
-Resume building
-Enhance your college application

Where:
The Queens Museum of Art
Flushing Meadow Corona Park

The World's Fair is in our Backyard!
Our Own World's Fair Day

Contact Ms. Aron, Mr Serra or Mr Moyal for further info.

The task of the designer
is to conceive, plan, and construct
artifacts that are appropriate
to human situations,
drawing knowledge and ideas
from all of the arts and sciences.

The High School for Arts and Business
105 – 25 Horace Harding Expressway
Corona, New York 11368
(718) 271-8383
Stephen M. Drakes, Principal

September 9, 1999

Dear Parents:

The High School for Arts and Business, in partnership with the New Jersey Institute of Technology, is pleased to announce an exciting opportunity for our students.

On Saturday, October 2, from 9a.m. – 3 p.m., we will be offering a Historic Preservation Workshop at the Queens Museum. Students who attend will participate in a host of activities including: a visit to the Worlds Fair Exhibit at the Queens Museum, a tour of the 1939 Worlds Fair Grounds and workshops focusing on the historical, artistic, literary and scientific aspects of the Worlds Fair.

Students who participate in this enrichment day will be eligible to compete for a paid internship opportunity in the Summer 2000. and upperclassmen will be able to enroll in a new elective in Historic Preservation being offered in the Spring semester.

We will be having a slide presentation and orientation in the student cafeteria for all interested students on Thursday, September 16 at 2:20 p.m. Please encourage your son/daughter to attend and take advantage of this unique opportunity.

Thank you for your cooperation in this matter. If you have any questions or concerns, please feel free to contact me at (718) 271-8383.

Cordially,

Leslie A. Rubenstein

Leslie A. Rubenstein
Assistant Principal, Supervision

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CENTER FOR ARCHITECTURE AND BUILDING SCIENCE RESEARCH

September 17, 1999

Dear High School for the Preservation Arts Project Friends,

The NJIT Center for Architecture and Building Science Research, the High School for Arts and Business, Corona Queens New York and the National Center for Preservation Technology and Training will be presenting an Historic Preservation Workshop for grades 9 through 12 at the Queens Museum of Art on Saturday, October 2 from 9:00 a.m. to 3:00 p.m. The theme of these historic preservation based lessons is "Worlds Fairs." The Queens Museum is the perfect setting for the event since it is located in the New York City Building, the only major structure that remains from both the 1939 and the 1964 New York Worlds Fairs. Our keynote speaker is Alex Herrera, Director of Technical Services, New York Landmarks Conservancy. Brooklyn Council member Ken Fisher, Principal Stephen Drakes and Frances Gale from the NCPTT will also say a few words of welcome.

We would be pleased if you would be able to attend this event as a continuation of the High School for the Preservation Arts project at the pilot school, the High School for Arts and Business. Four teachers from the school (English, History, Art, Science) will be teaching representative students from grades 9 through 12. Each teacher will teach four lessons on the theme around one of the historic structures from the 1939-40 and 1964 Worlds Fairs at Flushing Meadows, Corona New York.

I am enclosing a copy of the schedule for the day with directions to the Queens Museum of Art on the back. Please call Ruth Baker, Associate Director at the NJIT Center, if you have any questions and to let her know if you will be joining us. Her telephone number is (973) 596-3094.

We look forward to seeing you at what we anticipate will be a fun and informative preservation experience for all.

Best wishes,

Kate Ottavino

Kate Burns Ottavino
Director, Preservation Technology

Cc: E. Ehrenkrantz
R. Baker

Enc

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NEWS

Website <http://www.njit.edu/News/Releases.html

CONTACT: Kevin Hyland, Senior Publications Officer
(973) 596-5663

FOR RELEASE: Immediate # 12

Urban Teens to Explore New Careers Hidden in Old World's Fair Artifacts, Thanks to NJIT and NYC Board of Education Workshop Oct. 2

The Trylon and Perisphere from the 1939 World's Fair may not have significance and meaning for today's teenagers; nor may the Unisphere from the 1964 World's Fair.

But they could mean career opportunities ranging from artisans to engineers in the burgeoning field of historic preservation, say experts at the New Jersey Institute of Technology (NJIT) and New York City's Board of Education.

To drive home the point, the university and board have joined with the National Center for Preservation Technology and Training to sponsor a Historic Preservation Workshop with a World's Fair theme for students grades 9 through 12 from the city's High School for Arts and Business in Corona. The event will take place at the Queens Museum of Art, Queens, NY, from 9 a.m. to 3 p.m., Saturday, October 2.

The museum is situated in the 1964 fair's New York City Building, the only major structure remaining from the two New York World's Fairs.

Other organizations involved in the project from its inception include the World Monuments Fund (WMF), the National Center for Preservation Technology and Training of the National Park Service, the National Trust for Historic Preservation as well as many leading preservation organizations throughout the country.

The workshop is part of an ongoing pilot program, the High School for the Preservation Arts project, being developed by NJIT's Center for Architecture and Building Science Research and

the NYC Board at the *pilot* high school located in the Corona section of the city. All students participating are volunteers.

Over the past two years, NJIT's Center and the NYC Board have developed an interdisciplinary pilot preservation-based curriculum and lesson plans, along with an internship program to provide "hands on" instruction in preservation skills. Once the program is fully developed in a NYC high school the objective is to meet New York State Board of Regents requirements.

NJIT's Center and the NYC Board then hope to qualify students for admission to post secondary programs, and provide them with the equivalent of a year's preservation arts internship.

So far, the pilot program at the High School for Arts and Business has included a Preservation Week event and three summer internship programs at restoration sites sponsored by host artisan, A. Ottavino Corporation.

The sponsors hope the pilot program will serve as a model for other high schools to emulate in setting up their own preservation arts curriculum and vocational skills programs.

The need for historic preservation artisans was highlighted in a 1993 WMF symposium, "Employment Strategies for the Restoration Arts: Craft Training in the Service of Historic Preservation." The symposium found a serious shortage of skilled preservation artisans in the U.S., when compared to the number of historic buildings - estimated at more than 12,000 historically certified buildings -- plus artifacts in need of preservation or restoration.

According to NJIT Center Executive Director Ezra Ehrenkrantz, the ultimate goal of the high school project is career development: "We hope to enable program graduates to enter the workforce with an excellent academic background and earning potential, and the option to go on to post secondary education. We also hope this educational and skills training experience will help them understand how their studies are incorporated into their workplace activities and that this will bring them greater satisfaction in their lives and their work."

He noted that some students may go on to higher education and become architects, contractors, preservationists, civil engineers or have other preservation-related careers. Still others may become preservation craftspeople working in the building and construction industries.

The workshop will feature a curriculum model developed by the NJIT Center in which teachers from the High School for Arts

and Business will select a historic building or artifact from one of the two world's fairs and study it in all aspects of its place and time. Among the elements to be studied are: the physical setting of the structure, the living patterns of the time and how they shaped the structure, the impact of the events that took place at the time, as well as scientific, mathematical and technological developments of its day.

Also examined will be the impact of the period culture, including music and arts; government, politics and institutions, and economics and modes of education. In between workshops, the students will visit the Unisphere site and the World's Fair exhibit at the Queens Museum of Art.

At the end of the day, the students will be given a homework assignment: "If you had a million dollars, what World's Fair building would you restore, why and how?" Participating students will be eligible to compete for a paid internship in summer, 2000. In addition, senior students will be able to enroll in a new Historic Preservation elective in spring, 2000. The elective is funded by a National Endowment for the Humanities grant to NJIT Center and the NYC board.

The 1939 New York World's Fair introduced streamlined, modern design, as demonstrated in the Trylon and Perisphere, a 700-foot spire and orb as wide as a city block. They were the centerpiece of the fair's "World of Tomorrow," which painted an optimistic future for America through economic prosperity at a time when the country was still in the throes of the Depression.

The 1964 New York World's Fair emphasized "Man in a shrinking globe in an expanding universe," as symbolized by the Unisphere, a 12-story high stainless steel model of the earth located at the Fountain of the Continents near the center of the fair. Viewing the Unisphere from the edge of the Fountain's pool, an observer saw the world as it might appear from 6,000 miles in space. The Unisphere, which still stands, was designated a historic landmark by the city a few years ago.

NJIT is a public research university enrolling nearly 8,200 bachelor's, master's and doctoral students in 76 degree programs through its five colleges: Newark College of Engineering, School of Architecture, College of Science and Liberal Arts, the School of Management and the Albert Dorman Honors College. Research initiatives include manufacturing, microelectronics, multimedia, transportation, computer science, solar astrophysics, environmental engineering and science, and architecture and building science.

Yahoo! Internet Life magazine recently ranked NJIT the "most wired" public university in the nation, and has ranked it one of the top ten "most wired" campuses among both public and private

universities for three consecutive years. In addition, U.S. News and World Report's 1999 Annual Guide to America's Best Colleges ranked NJIT among the nation's top universities, and Money magazine's Best College Buys 1998 rated NJIT as the sixth best value among U.S. science and technology schools and among the top 100 overall.

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CENTER FOR ARCHITECTURE AND BUILDING SCIENCE RESEARCH

NJIT
New Jersey Institute of Technology

A Public
Research University

To: Stephen Drakes
Lynda Aron
Bryan Serra
Kieran McGuire
David Moyal

From: Kate Burns Ottavino Kate Ottavino

Date: August 10, 1999

Re: World's Fair Classes

Enclosed are several Lesson Plans that can be readily adapted to an Historic Preservation theme.

Each has a cover note briefly emphasizing its specifically Historic Preservation content. If you can be sure and include this element in your Lesson Plan then we will be sure to achieve an integrated Historic Preservation curriculum.

If you think that this is feasible, it would be good to just pick one Lesson Plan and modify it so that it becomes a 9th grade and then a 10th, 11th and 12th grade plan. In the end you will have four separate lessons each and we will be able to assess how the basic plan has changed to accommodate the different information to be covered at each grade level and how you make it attractive and instructive for the increasing cognitive abilities of the students.

I think it would be good if we could meet for two hours in the early days that you return to school. In this way we can plan for:

- Each grade's coordinated assignment
- The actual ebb and flow of the day
- When the lessons will be taught (Friday instead of Saturday is ok. The sooner you let me know the better as I will be able to contact Sharon Vatsky -she so far has planned for Saturday October 2, 1999)

Please advise and don't hesitate to call me to discuss the lesson plans. My telephone number is 718-848-9404.

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Trylon and Perisphere, 1939- Preservation Contents

Science

Discuss the materials that were used to construct the Trylon and Perisphere (See Attached Article). How would they be likely to determine what aesthetic issues would be raised unlike buildings that are more utilitarian in nature. Do symbols need to remain pristine? What kind of materials would be needed to have maintained these structures over the years? If these structures were replaced today what materials might they be made of.

Discuss the new materials introduced at the fair, what ones are still in use. Which went out of fashion and which have had to be "abated".

English

The use of symbolism in literature – literary vs physical symbols. Why are geometric forms more powerful visually than when described with words - or are they. Can something be made more beautiful by its description than by its reality.

History

The role of symbols and icons in history- when and why do political leaders borrow symbols from the past to give legitimacy to the present. How does the Perisphere and Trylon differ in its meaning from the 1960's Fair Globe?

Art

See English and History above

Trylon and Perisphere in construction

History and Science

Use of photographs for identifying missing elements or materials.

English

How to use photographs to illustrate a story?

Art

How you can emphasize or demphasize a subject in a photograph

Parachute Jump, 1939

English

Writing exercises that are inspired by what it might have been like to be at the fairs. What elements or grouping of things made you feel most like you were "There"

Science

Challenges in moving the jumps to Coney Island - what scientific principles were applied in the moving of the jump and its re-erection. What would you look for as a safety engineer to determine its condition for kids to ride on today?

Robert Moses, 1888-1981 and Unisphere, 1964

History

How do the tangible legacies of historic personages help to make them more real today? How has the desire of a leader to build shaped the society of the people who followed them?

English

How does a writer's point of view shape the identity and the interpretation of facts about the person they are presenting?

Science

What materials are considered to be monumental and why? Why is stone considered a noble material (hard to extract from the earth- costly to quarry) and others ordinary (brick comes from clay and readily available, easy to quarry)

Art

How does the placement of building create a sense of hierarchy among them? Why would Moses be particularly attracted to creating Fairs? Would you say his physical creation were a manifestation of himself?

Royal Tires Ferris Wheel

Similar ideas for Unisphere lesson but very good for a class project focusing on the New York State Pavillion.

Science

Deterioration of the Mosaic tile and setting bed

Art

Mosaic itself and history of its use in design- why it might have been selected as the medium of expression here.

History

Research why Mosaic was used. What did the original building look like? Are there any elements missing today and how would we document that fact?

English

Study description of the Worlds Fair and its structures. What words or phrases made them most come 'alive" to you?

At the Fairs!

Overview

New York City has a long history of celebrations and fairs. Since the American Revolution in 1776 New Yorkers have been recognizing the accomplishments of individuals, commemorating important events, and sharing with the world great advances in the arts and sciences.

George Washington's inauguration as President of the United States took place in New York City in 1789. New Yorkers celebrated with the rest of the country, as they did in 1889 with a centennial event honoring the nation's first President, and again in 1989 with the bicentennial celebration. Other New York City festivities honoring leaders and political events have included the City's salute to Admiral Dewey in 1899 on his triumphant return from the Philippines at the conclusion of the Spanish-American War. In 1909 the City was decked out to commemorate the centennial of the birth of Abraham Lincoln. In 1918 the City initiated the first Veterans Day Parade, and on May 7, 1945, the metropolis rejoiced in the ending of the second World War. In another kind of celebration, New York was the center of the country's festivities honoring the three astronauts of Apollo 11, Neil Armstrong, "Buzz" Aldrin, and Michael Collins, the first men to set foot on the moon, in 1969. More recently, in 1990, Mayor David Dinkins welcomed South African anti-apartheid leader Nelson Mandela to the City with a parade in his honor in Harlem.

New Yorkers also have a history of rejoicing in the completion of major construction and engineering feats. In 1809 the citizens of New York lined the banks of the Hudson River to congratulate Robert Fulton on his revolutionary steamboat, the North River Steamboat of Clermont, as it sailed up the Hudson to Albany. As New York grew as a commericial center for the country, so did the need for better shipping lanes to the West. In 1825, the City and the nation celebrated the opening of the Erie Canal. In 1842 the City was alive with merrymaking to welcome the completion of the Croton Water System. A great sense of jubilation accompanied the opening of the Brooklyn Bridge in 1883, as did the unveiling in 1886 of the Statue of Liberty. These are some of the City's memorable events.

Perhaps most triumphant of all these types of celebrations that have taken place since Washington's inauguration are the World's Fairs. The first of New York's three World's Fairs opened in 1853 in the great Crystal Palace modeled after London's Crystal Palace built in 1851. An exhibit of art and industrial objects from across the globe graced the halls of the elegant pavillion. Thousands came to inspect the latest inventions in machinery and new products that promised to improve life for all Americans. In 1858 a disastrous fire swept through the Crystal Palace, putting an end to one of New York's greatest celebrations.

Eighty-one years later New York City provided residents and visitors with another World's Fair. The planning for the 1939 World's Fair, built on the site of the Corona Dump in Queens (the present Flushing Meadows/Corona Park) began in 1935. Led by Grover Whalen, President of the New York World's Fair 1939, Inc., civic and business leaders set out to create a powerful statement about commerce and the rebirth of a nation in spite of the Great Depression. The Fair opened on April 30, 1939, the 150th anniversary of George Washington's inauguration as President.

Promising to be a window onto the world of tomorrow, the 1939 World's Fair envisioned a bright future filled with modern conveniences, multi-lane highways, and sleek, streamlined

At the Fairs!

automobiles. Consumer goods made from new materials such as nylon, rayon, asbestos, and fiberglass captivated the imaginations of audiences from around the world.

The emblematic featues of the Fair included streamlined forms, speed and efficiency, a 610-foot high triangular obelisk, the Trylon, and a 180-foot high white sphere, the Perisphere. These two timeless forms remain the symbols of a Fair devoted to providing visitors with a view of a Utopian future.

On October 27, 1940, the Fair closed due to a financially bankrupt Fair Corporation. Twenty-four years passed before the City hosted another such spectacle of international commerce, ingenuity, and culture. World War II postponed "The World of Tomorrow's" prophesies, but by the 1964 World's Fair an affluent and consumer oriented middle class America owned 61 million cars (23 million more than predicted in 1939); fled the urban cities to populate suburban (but not Utopian) communities; supported and believed in a space program to get a man on the moon by the decade's end; and constructed the Federal Interstate Highway System.

Robert Moses, New York City's long time Commissioner of Parks, was a prime supporter of both the 1939 World's Fair and the 1964 Fair. He said of the 1964 Fair,

> "The basic purpose of the Fair is Peace through Understanding, that is education of the peoples of the world as to the interdependence of nations to insure a lasting peace. The Fair is dedicated to Man's achievements on a shrinking globe in an expanding universe, his inventions, discoveries, arts, skills, and aspirations; to the celebration of the 300th anniversary of the founding of the City of New York; to the opening of Lincoln Center for the Performing Arts; to wholesome entertainment; to the revitalization of the Metropolitan arterial program, and the completion of Flushing Meadows Park with a legacy of permanent recreational facilities after the Fair."

Moses' statement of intention for the Fair was symbolized most graphically in the construction of the Unisphere, a 1400 - foot high, 900,000 pound steel globe. Like the Trylon and Perisphere of the 1939 World's Fair, the Unisphere has become the lasting symbol of a Fair optimistically dedicated to making the world "a small place after all."

The modern and the traditional stood together at the 1964 World's Fair. In the New York State Pavilion one could see the commissioned murals, "Thirteen Most Wanted Men" painted by Pop artist Andy Warhol, and in the Vatican Pavilion one could visit Michelangelo's "Pieta." Industry flaunted its achievements and its innovations: one could ride on the U.S. Royal Tire's Ferris wheel, visit the Coca Cola Pavilion, catch the Walt Disney fantasy production at the Ford Pavilion, or enjoy Bil and Cora Baird's puppet performance, "Motor Blockettes," at the Chrysler pavillion.

Hope that the 1964 World's Fair would inspire a wisely planned and peaceful world has not become a reality. In 1964, New York, like the rest of the nation, was beginning to stir to action in the face of civil rights issues and the growing activism of the post- World War II baby boom generation. As with the 1939 Fair, the 1964 World's Fair ended its reign as chief attraction in New York City in its second year with a huge deficit. But both Fairs brought the "new age" of technology and hope to visitors. These two major celebrations in New York City history are remarkable reminders of the impressive impact that such events can have on individuals and on their ideas and visions of the future.

At the Fairs!

Trylon and Perisphere, 1939 New York World's Fair, modern print from 1939 negative by Richard Wurts, MCNY

Background

The stark white forms of the Theme Center dazzled visitors and symbolized "The World of Tomorrow." The simple geometric forms of the tower and globe were the dominant architectural features of the Fair. The Perisphere, a 180-foot high white sphere, was poised on a cluster of fountains and flanked by the Trylon, a narrow 610-foot high triangular obelisk. A 900-foot long spiral entry ramp, called the Heliclimb, encircled both structures.

The Fair's designers had argued for months over how to inspire hope for the future through the look of the buildings. When the Trylon and Perisphere were selected, they became the pervasive marketing tool of Grover Whalen, President of the Fair. The circle and triangle appeared everywhere. Newspapers made jokes about the shapes, callling them "the egg and the tack."

Awaiting the visitor in the Perisphere was a large diorama. Designed by Henry Dreyfuss, "Democracity" depicted a planned city in the year 2039. Radiating out from the skyscaper city of "Centerton" were suburban "Pleasantvilles" and industrial "Millvilles." This vision of the future proffered a better life through the abundance of consumer goods made from "new" materials introduced at the Fair: nylon, rayon, cellophane, Lucite, Bakelite, fiberglass, and asbestos.

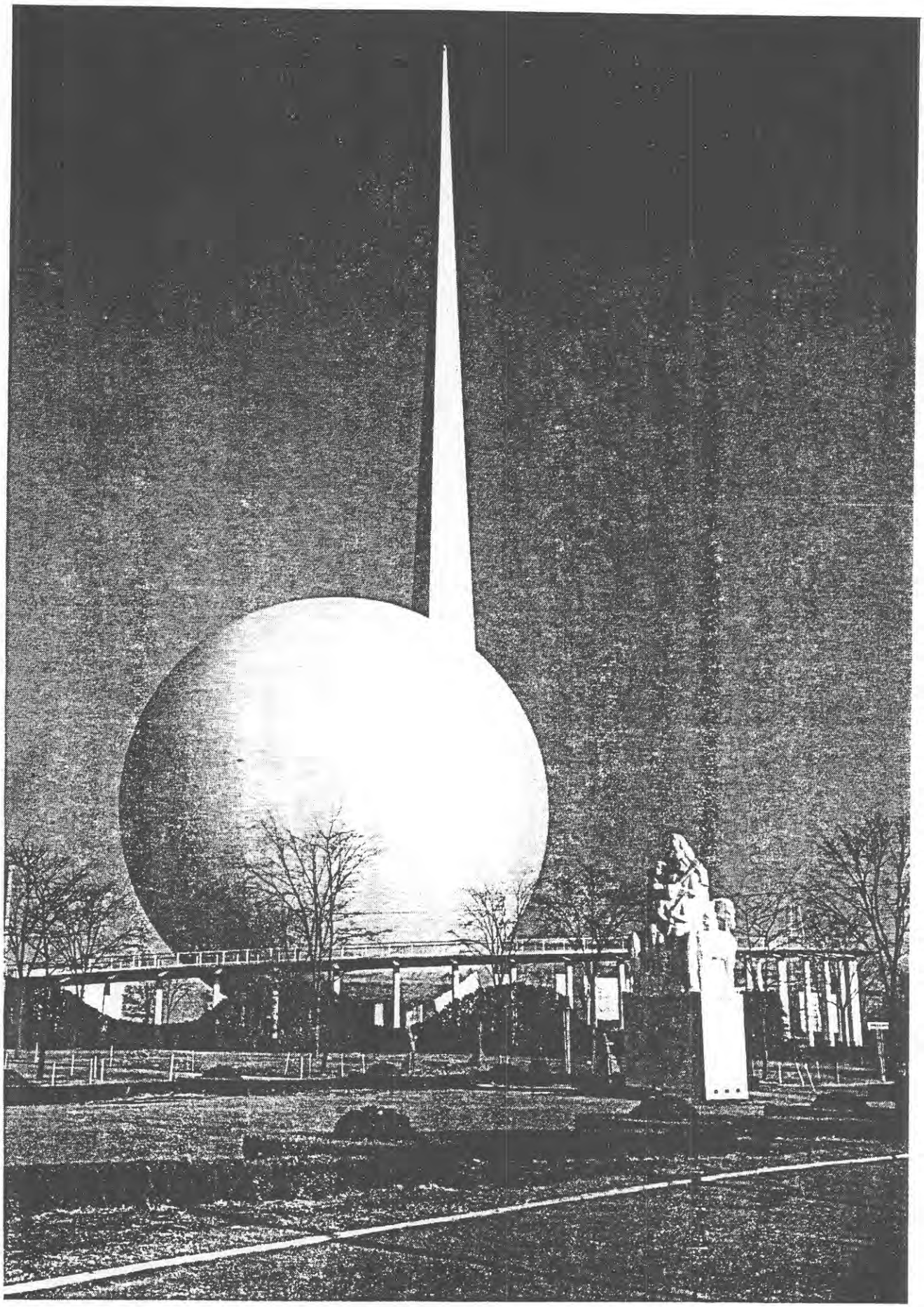
Democracity competed with other visions of the future as well as innovative products. Major American corporate exhibits consistently stole the show. RCA's introduction of the television, Westhinghouse's household robot "Elecktro," Kodak's color photography and Borden's electrical cowmilking "rotolactator" convinced the visitor that big business was the middle man between technological innovations and consumers.

Suggested Activities

Both Fairs introduced new materials and products. Encourage your students to list and investigate innovations that have become part of our daily lives in the last few years (i.e. silicon chips, ceramic engines, lasers).

Thinking about the future is not an easy activity. It requires one to imagine how we might solve the problems of the day. Ask each student to select a classmate to interview. The following questions are a guide to help the interviewer find out what the interviewee imagines his life and neighborhood will be like in 15 years:

- How old will you be in 15 years?
- Describe the kind of job you hope you will have.
- Explain what you think will be your biggest concerns?
- Explain what you think will bring you the most happiness.
- Where do you think you will be living?
- Explain what you think your new neighborhood will be like. What do you think will be the biggest problems facing your neighborhood, or your city?
- What changes do you think New York City will undergo?



At the Fairs!

General Motors Futurama, 1939 New York World's Fair, modern print from 1939 negative by Richard Wurts, MCNY

Background

Urban problems such as poverty, overcrowding, and filth were heightened by the Depression. Planned decentralized communtiies were popular solutions offered by city planners. The automobile was essential to the creation of such planned communities.

General Motors' exhibit, Futurama, designed by Norman Bel Geddes, was the most popular exhibit of the Fair. This photograph shows long lines of people winding their way around and into the exhibit, which culminated in a 15-minute trip into the year 1960. People climbed into one of 552 moving chairs and listened to General Motors' view of the future from speakers installed in the backs of the chairs. A 35,000 square-foot diorama showed spectacular images of vast highway systems filled with streamlined automobiles travelling at the unheard of speed of 100 miles per hour. These super-highways linked the suburban planned communities to remodelled old cities and new industrial parks.

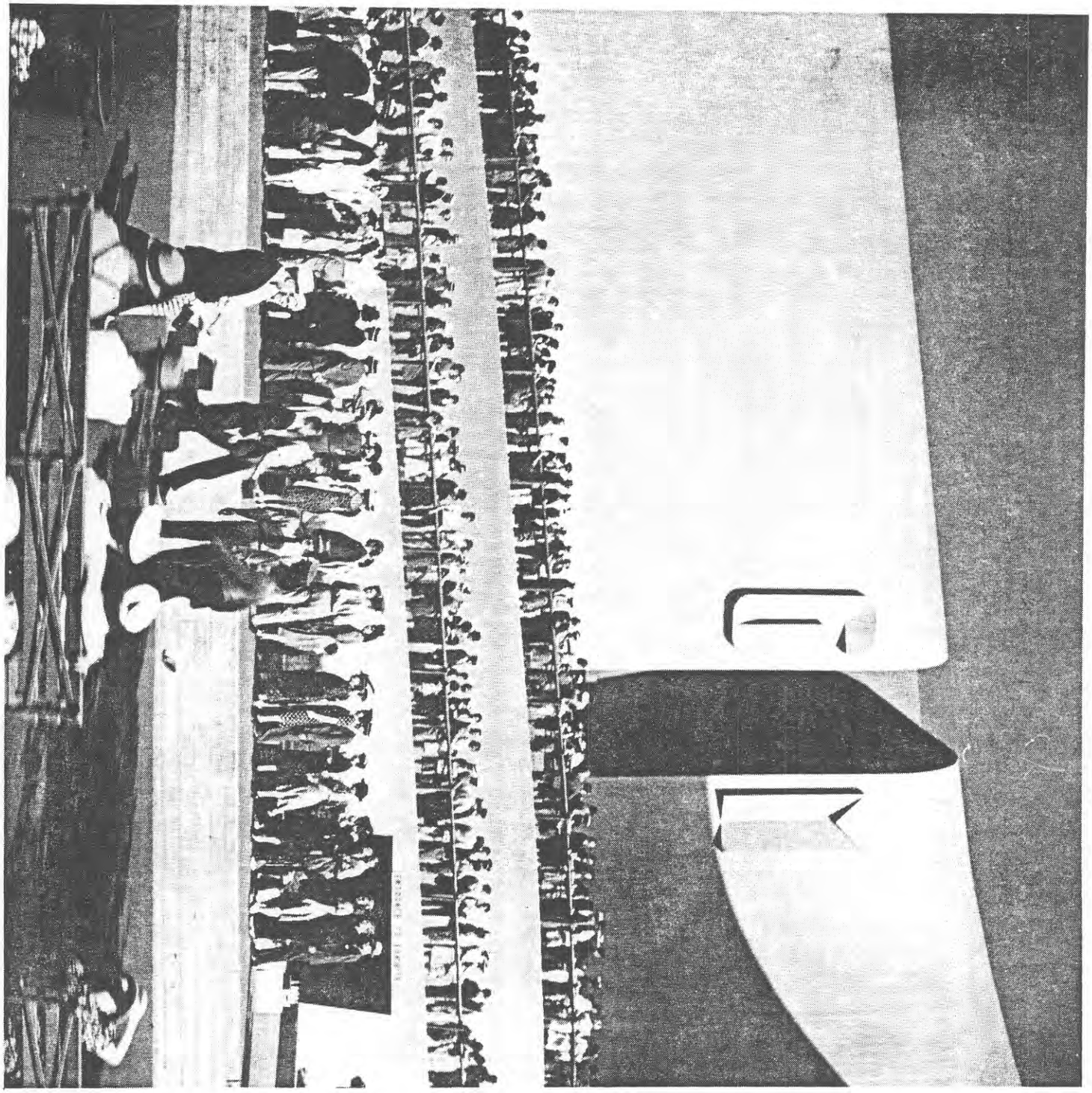
Streamlining became the symbol of the contemporary vision of modern design. Streamlining rounds out all sharp angles. The design was first applied to cars, airplanes, trains, and ocean liners. Vehicles with curves move more easily through air than do objects with angles. Designers looked to birds and fish and other natural elements to create a look of speed.

The industrial designers applied this streamlining to everything from automobiles to household objects and buildings. People wanted the objects they used to be shaped by lines that reminded them of speed and efficiency.

Suggested Activities

Have your students look around their classroom to find objects that can be streamlined. Have them imagine a big drop of water falling over the object, rounding off all the edges. Ask them to draw the new, streamlined look.

Encourage your class to imagine themselves in the following role. They are cityplanners at the Year 2090 City Planning Conference. Their task is to design an Experimental City. This experimental city will be built in several locations throughout the country. As a group they will discuss what amenities are needed to make a city liveable: housing, parks, schools, hospitals, sewage and garbage disposal, libraries, water system, highway and air transportation, mass transit, industrial parks, fire and police departments, etc. They will need to decide where they want their city to be located, what kind of industries will support it, and how to make as little impact on the environment as possible. They can divide into teams to design alternative solutions. They can communicate their vision in a number of ways: a series of drawings, a painting, a scale model, or even an illustrated story. Presentations can be made to a panel of "experts," representing environmentalists, business leaders, and government officials.



At the Fairs!

APPENDIX 3b (1)

Parachute Jump, 1939 New York Worlds Fair
modern print from 1939 negative by Richard Wurts, MCNY

Background

In a world without television or computer games, recreation was very different in 1939. The nation was still in the throes of the Great Depression, and most people had to find ways to entertain themselves that cost little or no money. Children read "the funnies" in comic books or newspapers, paid a quarter to spend Saturdays at the movies, played outside, or sat around the radio and listened to their favorite shows.

Summer entertainment included country fairs, which drew large crowds for an inexpensive daylong excursion. The 1939 World's Fair provided traditional agricultural competitions, sideshows, and thrilling amusement park rides. For a 75-cent admission price or a $15 season's pass, the visitor could, among other choices, enter a cow-milking contest, watch General Electric's man-made lightning bolt, make a free AT&T long distance telephone call, and sit in the audience of the 10,000-seat marine amphitheater to watch Johnny "Tarzan" Weismuller swim with fellow Olympic champion Eleanor Holm.

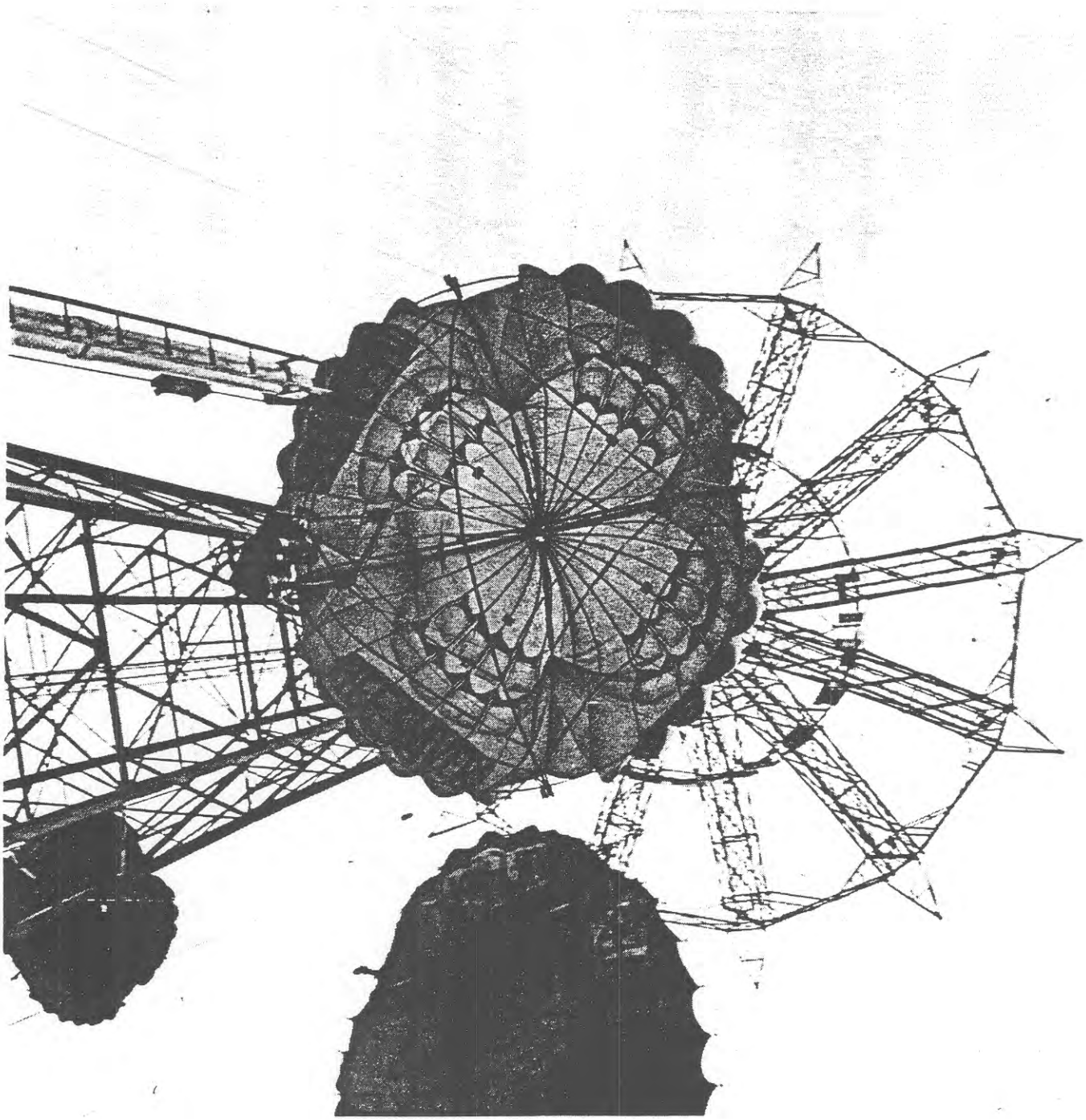
One of the most popular rides at the Fair was the Lifesaver's Parachute Jump. It still spurs vivid memories in people who took the flight over 50 years ago:

> I was 10 years old and weighed very little. I was very thin. I went on the Parachute Jump with my mother, who was also small and thin. The attendant had to come on board with us to hold down the seat. The ride up was slow and frightening--I remember squeezing his arm and him asking me to please let go! When Mama and I got off, my father took one look at me and thought I was going to faint. They took me to a first-aid station and a nurse held something under my nose-- I guess it was smelling salts. I often wonder if this was the start of my fear of heights that persists to today. Every time I go to Coney Island and see the Parachute Jump, the incident of 1939 stands out clear in my mind. I've never gone on that ride again!!! I've told my grandchildren about it and they call me 'chicken!!!'
>
> Margaret Collins, 1989

Suggested Activities

Storytellers make events come alive. Using exaggerated body movements and facial expressions and suggestive language, a good storyteller captivates an audience. Have your students think about amusement park rides of today. Ask them to choose their favorite or scariest ride and describe it to the class in a "Storytelling Hour." Encourage them to use words that evoke actions, feelings, and emotions.

Have your students design rides for the new "Millenium Amusement Park." Brainstorm to develop various types of rides, e.g., space flight, underwater, inner body, time machine. Encourage students to work in teams to develop new designs for these categories. Students will need to describe the proposed materials, estimated cost of construction, number of people on a ride at one time, profit potential, and how this ride is better or different than other rides submitted for consideration.
Have the teams present their proposals to the Planning Commitee of the "Millenium Amusement Park." If the rides are chosen to be in the fair, then team members can develop the appropriate advertising to make their ride a popular success.



At the Fairs!

Robert Moses, 1888-1981, photographer unknown, MCNY

Background

As one of the most powerful men in both New York City and state for over forty years, Moses possessed the unique ability to secure money to build his enterprises and the genius to get things done. His power came not as an elected official, but from numerous appointed state and public works posts he held simultaneously, among them Chairman of the Triborough Bridge and Tunnel Authority, New York City Parks Commissioner, and New York State Parks Commisioner.

He was responsible for every bridge and tunnel built after 1931 that linked one borough to another. He masterminded the entire network of major roads and highways that crisscross the city, in addition to all the connecting highways in Westchester, Nassau, and Suffolk Counties. He added 658 playgrounds to a city that was quickly running out of space, reshaped every park, built beaches, the United Nations, the New York Coliseum, and two World's Fairs.

Robert Moses became President of the 1964 World's Fair Corporation in 1960 at the age of 72. He believed in the longterm civic benefits that the Fair could provide. Shea Stadium, the Museum of Science and Technology, the Queens Zoo, and the Queens Botanical Gardens were all part of his longterm plan for Flushing Meadows-Corona Park.

Suggested Activities

Have your class discuss the accomplishments of Robert Moses. The New York City Department of Parks and Recreation, the New York State Office of Parks, Recreation, and Historic Preservation, and the Triborough Bridge and Tunnel Authority would be good sources for information. Locate maps of New York City that show the highways, bridges, tunnels, and parks created by Robert Moses. Have your class highlight Moses's projects. Encourage your students to imagine the city without Robert Mose's projects. Have your students discuss how their own lives would be different if these projects had never been built.

Encourage your students to roleplay the following scenario: A multi-lane highway will be built through your community. The state government has given two alternate routes for this highway. Plan A will cut through a residential area. Plan B will cut through a wildflife preserve. Students can take on the following roles and those of their own choosing:

- A resident who has lived in the same house all his life. His house will be demolished if Plan A proceeds.
- A store-keeper whose business will have to move.
- A store-keeper whose business will be in a prime location if Plan A goes through.
- A gameskeeper for the reserve.
- The Community Board President who envisions "the new town of tomorrow."
- A real estate developer who recently purchased land near the wildlife preserve for his new housing development "Reserved Estates."

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APPENDIX 3b (1)

At the Fairs!

Unisphere, 1964 New York World's Fair, modern print from a 1964 Ektachrome slide, MCNY

Background

To attract and appeal to a greater majority of Americans, the 1964 World's Fair aimed for more variety in themes and pavilion designs. "Man's Achievenments in an Expanding Universe" and "A Millenium of Progress" reiterated 1939 belief in unbridled progress and celebration of man's accomplishments, while "Peace Through Understanding" and "It's a Small World" strove to bring the people of the world closer together to solve the earth's problems, and to insure a lasting peace through education.

Commisioner of Parks Moses wanted the "Peace Through Understanding" theme symbolized in a permanent, universally comprehensible structure. Located on the exact spot as the Trylon and Perisphere of the 1939 Fair, the Unisphere, designed by Gilmore Clarke, became the visual theme and logo of the 1964 World's Fair. Donated by U.S. Steel, the 900,000 pound steel see-through globe of the earth was complete with continents and a steel grid of longitude and latitude lines. Remaining as a permanent structure, the Unisphere continues to be an impressive sight rising to a height of 140 feet with a diameter of 120 feet.

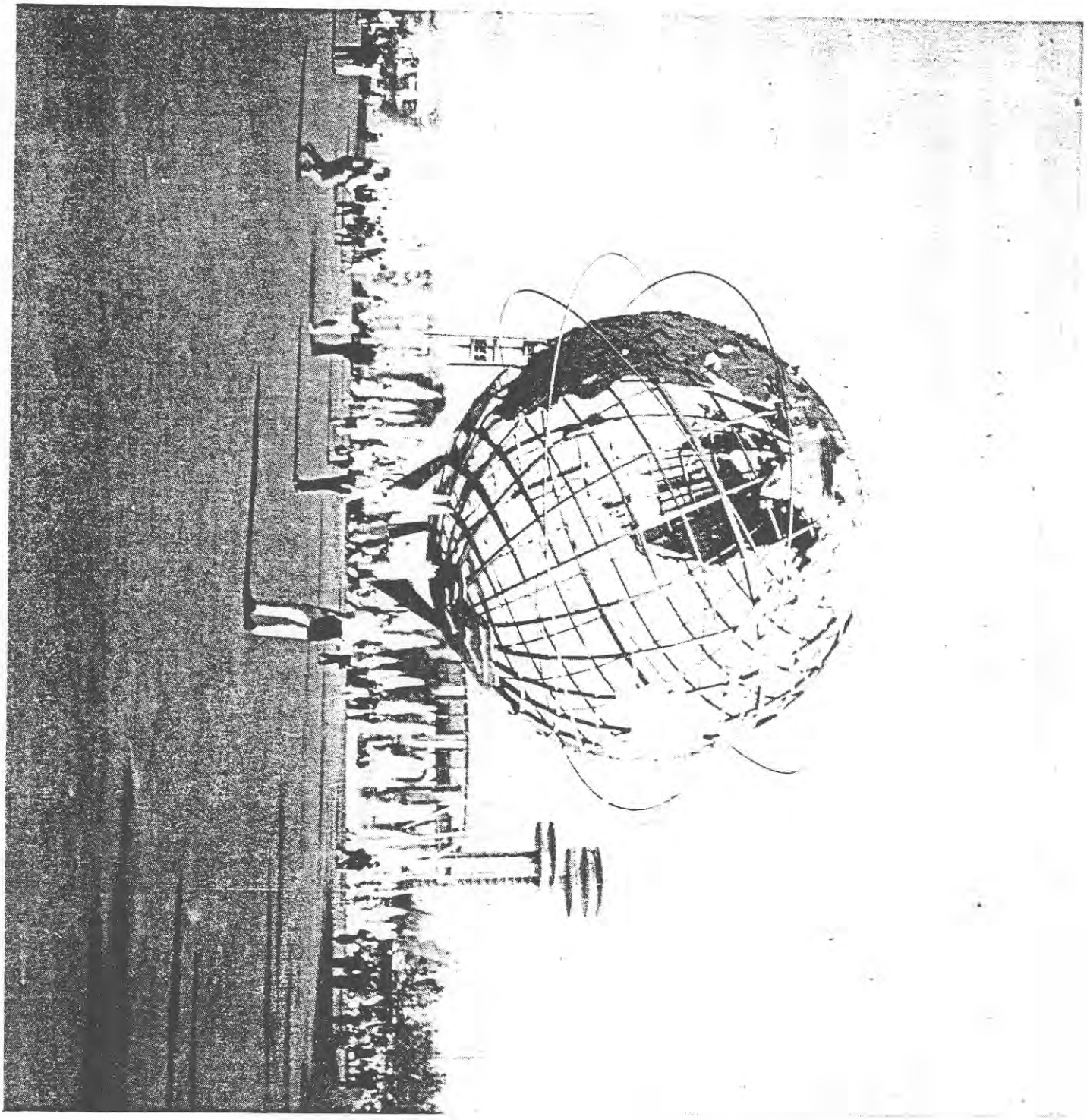
Although fifty-one million people attended the 1964-1965 World's Fair, it ended with a $10 million deficit. Although Flushing Meadows-Corona Park reopened in 1967 without all the improvements Moses had hoped for, he did attain a permanent park on the former ash dump and it remains, to this day, as one of his most outstanding achievements.

Suggested Activities

Oral history interviews provide a personal view of events. (See Oral History Guidelines.) Invite people to your classroom who attended one of the Fairs. (Many of your students will have parents or grandparents who attended one of the Fairs.) Students can interview them for their impressions and stories about the Fairs. Encourage your guests to bring in photographs, souvenirs, or other memorabilia from the Fair. Your students can prepare questions in advance.

Have your class brainstorm to select a theme for the next World's Fair. Using a variety of arts media including oaktag and clay, let them design a symbol for the theme and make play dough models of the new symbol, the Trylon and Perisphere, and Unisphere for display.

Design the next World's Fair. Corporate and government sponsors are the primary tenants at these fairs. Encourage your students to think of themes that will appeal to each sponsor as well as attract the public. Students can design logos which will symbolize their themes, and then utilize the logos in buttons or posters. Have your students discuss the criteria they used in choosing their themes and logos.



UNISPHERE

At the Fairs!

Royal Tires Ferris Wheel, 1964 New York World's Fair, modern print from a 1964 Ektachrome slide, MCNY

Background

For an admission fee of 25 cents, a visitor could take a ride on the Royal Tires Ferris Wheel. The giant whitewall tire soared 80 feet into the air and gave the visitor a spectacular view of the fairgounds. Twenty-four barrel-shaped gondolas, each carrying 4 people, moved around the circumference of the wheel.

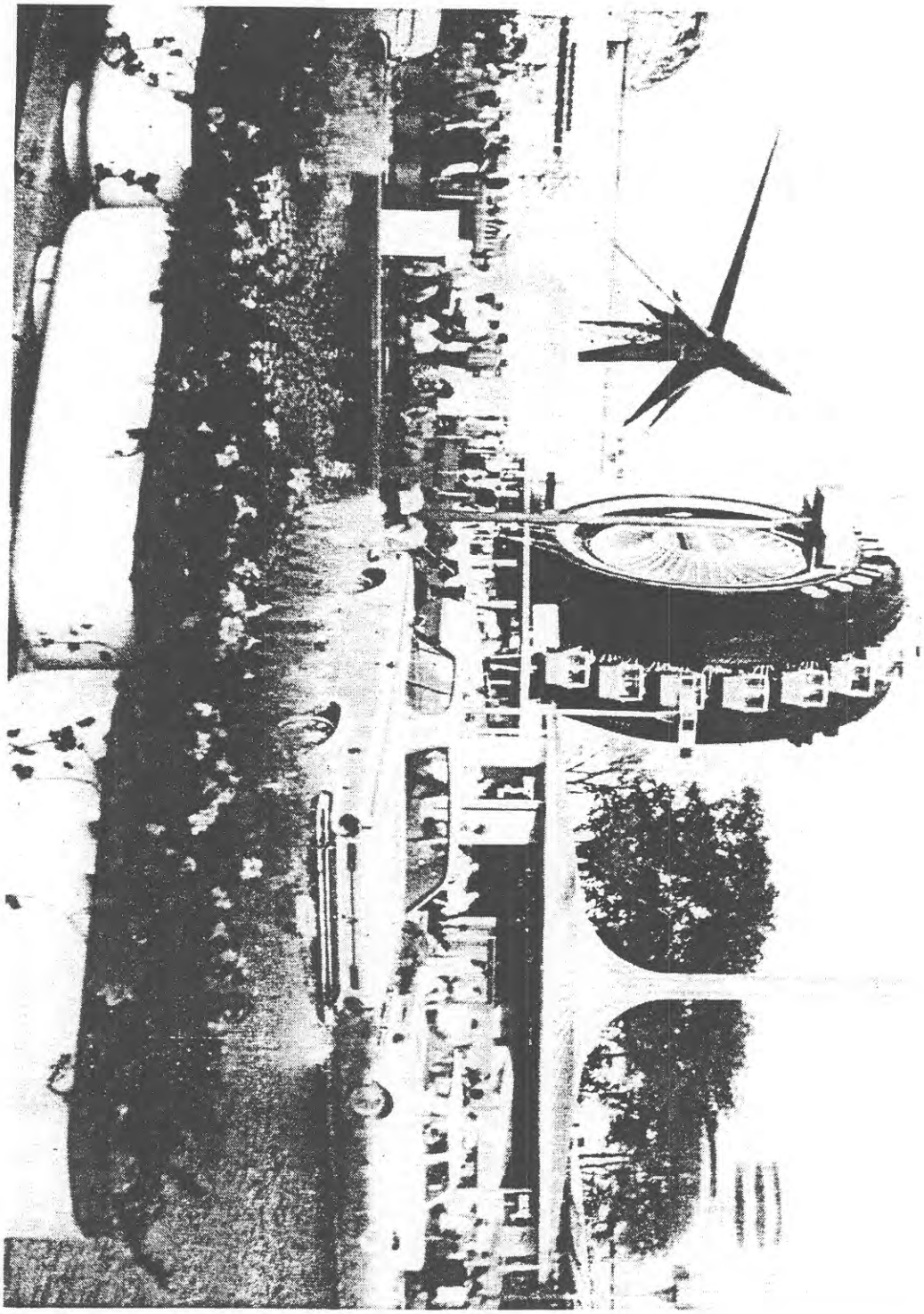
World's Fairs provide architects and engineers wonderful opportunities to create and develop designs that can dazzle the public. The Eiffel Tower, designed by Alexander Gustave Eiffel for the 1889 World's Fair in Paris, France, ranked as the world's greatest engineering feat. Four years later, as an American answer to the Eiffel Tower, George W. Gale Ferris designed and built the largest "Ferris Wheel" for the World's Columbian Exposition in Chicago. Dismantled and used again at the Louisiana Purchase Exposition in St. Louis in 1904 and then sold for scrap metal, this original Ferris Wheel rose 250 feet into the air, with 36 cabs on its circumference holding 60 people each.

Whereas the 1939 World's Fair design theme lent a uniform streamlined look to everything, Pop Art influenced the look of the 1964 Fair. Using such common-place objects as tires, the designers mixed high and low art to convey their vision of the future and to sell the products of the corporate sponsors. Visitors could walk into a giant working engine at Chrysler's exhibit. Refreshments were sold from stands that were topped by huge representations of whipped cream-topped sundaes (see RCA and Unisphere photos). Inlaid in the floor of the New York State Pavilion was the largest two-dimensional map in the world, a mosaic tile map of the state of New York. The 9,000 square foot Panorama of New York City, exhibited at the New York City Building, was the largest scale model of a city. The Unisphere was, of course, the largest globe in the world. Theme parks today use similar exhibition design techniques to thrill and amuse people.

Suggested Activities

When the majority of the population could not read one language, businessmen and craftsmen used pictures to represent their name or the service they offered. A shoe hanging outside meant a cobbler was within. The red and white barber's pole actually represented the barber's sideline, surgery.The mortar and pestle used in early apothecary stores is still used on drug store signs today. Encourage your students to find examples of logos which visually represent a business or company. Have them research the origin of the design.

The designer of the Royal Tires Ferris Wheel took his inspiration from an ordinary whitewall tire to design a ride which advertised a corporation. Encourage your students to invent a corporation (or use an existing one) and design a stand or pavillion for that corporation to be used at the next World's Fair. The only criterium for design is that the average fairgoer can immediately tell from the design the nature of the company's business.



At the Fairs!

Trylon and Perisphere in construction from Grand Central Parkway, 1938, photograph by Richard Wurts, MCNY

Reading a Photograph

Photographs are valuable primary resources which can reveal information about the people, places, and events of the past. Using photographs in the classrom is a way to bring history to life pictorially. The following are questions which can be used to dissect and analyze any photograph.

What is happening in the picture?
What objects in the picture can you identify?
With which general time period are those objects associated?
Is there anything in the photograph which you cannot identify?
How are people dressed?
What are they doing?
Do you think that the people in the photograph are related? If so, how?
What clues suggest this?
Where do you think the photograph was taken?
What distinguishing characteristics of buildings or environment give you clues to the location?
Why do you think the photographer shot this picture?

When using photographs as documentary evidence, it is important to remember that photographs can be staged or altered. Also, the photographer may be shooting scenes to represent a particular viewpoint. When using photographs for research, don't draw conclusions from just one print. Further sources must be utilized, such as historical records, other photos, or books.

Suggested Activities

To introduce this History Education Kit as a unit project, display all the images for the students. Have students make note of the questions these images provoke. They will be the basis for future discussions.

Before relating the background information supplied with an image, ask your students to examine each photograph and describe what they see. Encourage them to extract as much detail as possible. Ask them to infer the photographer's intent. After your discussions, refer back to the images and reevaluate your descriptions of the photos.

This kit provides photos from both the 1939 and 1964 World's Fairs. The photos can be grouped according to the Fairs and comparisons can be made between the Fairs. Encourage your students to examine the clothing, architectural designs, and methods of transportation depicted in the photographs.

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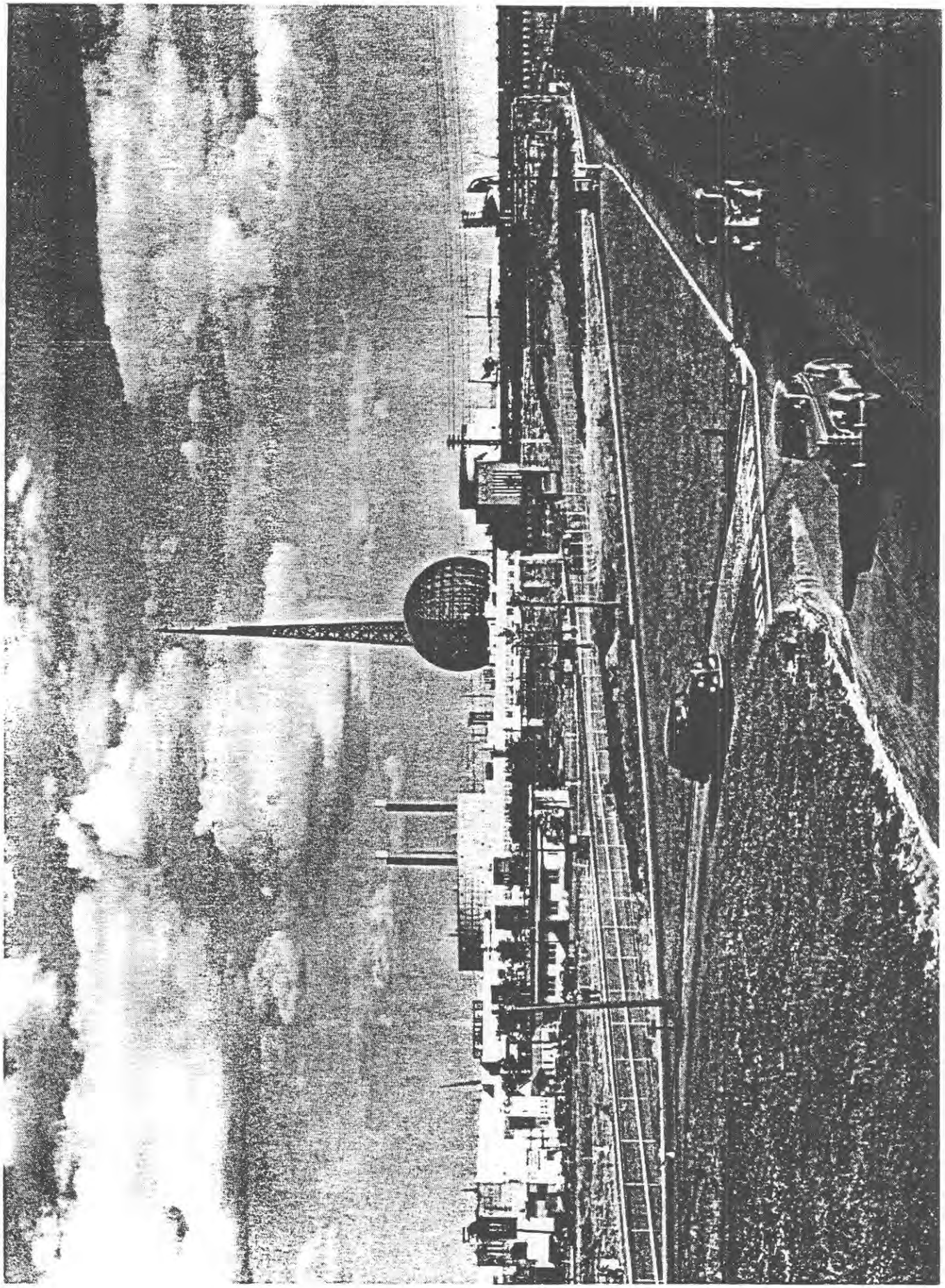

At the Fairs!

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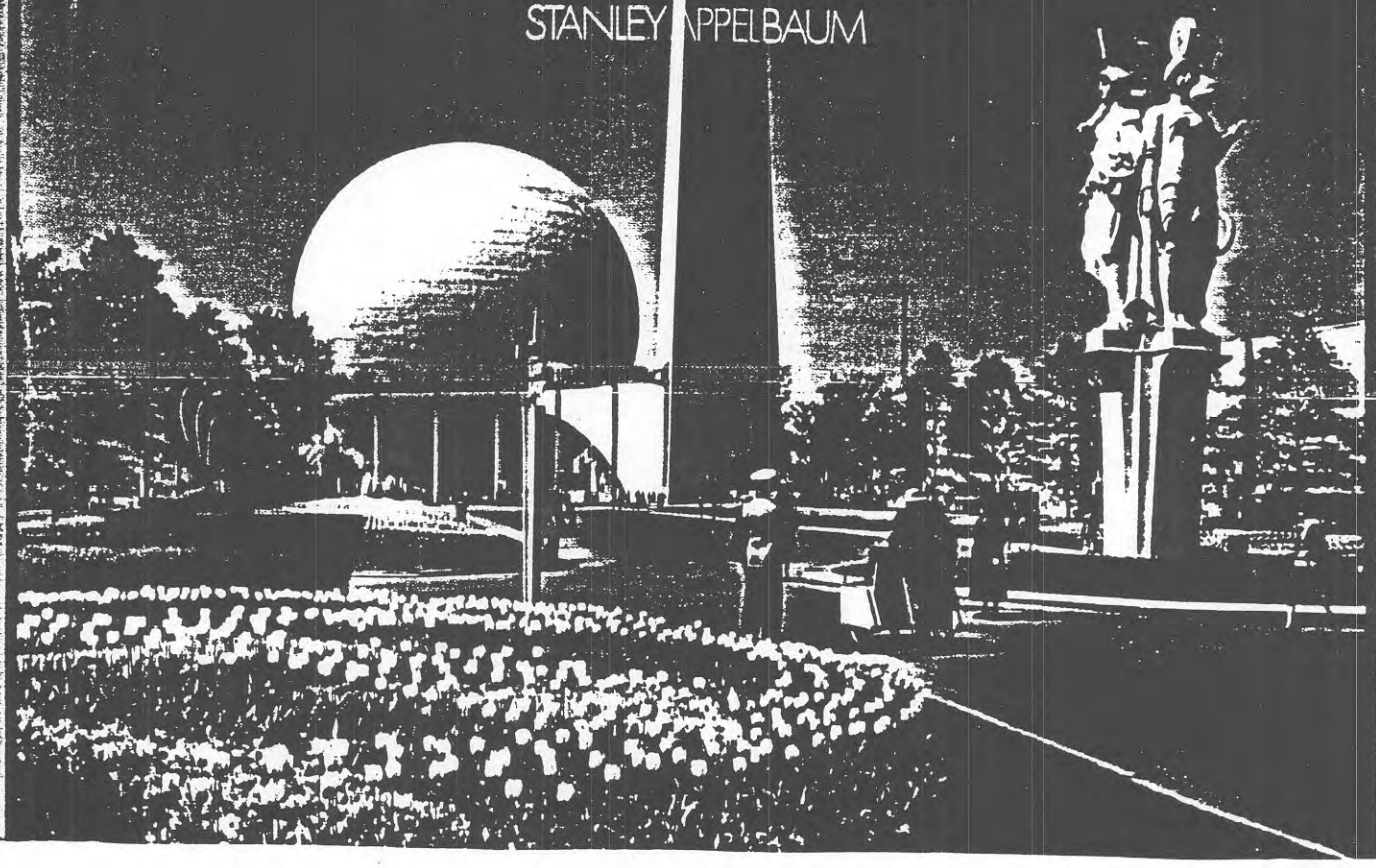
THE NEW YORK WORLD'S FAIR 1939/1940

IN 155 PHOTOGRAPHS BY RICHARD WURTS AND OTHERS

SELECTION, ARRANGEMENT AND TEXT BY STANLEY APPELBAUM



THE NEW YORK WORLD'S FAIR 1939/1940

IN 155 PHOTOGRAPHS BY RICHARD WURTS AND OTHERS

SELECTION, ARRANGEMENT AND TEXT BY STANLEY APPELBAUM

The New York World's Fair 1939/1940 may not have been the greatest of all world's fairs, but it is probably the most fondly remembered of all of them, a spectacle that no one who was there has forgotten. The 700-foot-tall Trylon and the 200-foot-wide Perisphere are still vivid symbols and memories of a wonderful and lost time for millions of people.

Do you remember seeing or being told about the vast diorama of Democracity representing the theme of the Fair in 1939, "Building the World of Tomorrow"; GM's Futurama ride; the world's largest mirrored ceiling; 3-D movies; Elektro, a robot seven feet tall; the Town of Tomorrow; Toyland; the Parachute Jump; Billy Rose's *Aquacade*? The Fair is here in this book which recaptures its abiding images in 155 photographs, 93 of them by Richard Wurts, and catalogues some of its best-remembered artistic and scientific achievements.

There is the typical 1930's décor of the Bauhaus and Art Deco persuasion designed by such top-flight industrial designers and architects as Norman Bel Geddes, Raymond Loewy, Albert Kahn, Morris Lapidus, Edward D. Stone, Skidmore and Owings; its scientific contributions (fluorescent lights, nylon, television); its paintings, fountains, sculptures and murals by artists like Salvador Dali, Rockwell Kent, Isamu Noguchi, Alexander Calder, Jo Davidson, Carl Milles, Paul Manship; its cultural and popular attractions; personalities like Eleanor Holm, Johnny Weissmuller, H. V. Kaltenborn, and many others).

The detailed introduction relates the history of the Fair and the people and principles involved. The accurate and informative captions give the architects and important statistics of the buildings illustrated, and tell about many more exhibits and features not shown in the pictures. You will revisit the New York World's Fair and recapture some of its magic when you buy this book.

Original Dover (1977) publication. 155 photos, chiefly one to a page. Map. Introduction. Captions. Index. xviii + 152pp. 8⅜ × 9¼. Paperbound.

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INTRODUCTION

Chicago had dazzled the world with its Columbian Exposition of 1893—the source of the Ferris wheel and the consecration of Beaux Arts architecture in America—and had scored high with its Century of Progress fair in 1933/1934. Philadelphia had hallowed its past at the 1876 Centennial —which featured the telephone—although its 1926 Sesqui-Centennial was a failure. The Louisiana Purchase Exposition (St. Louis, 1904) and the Panama-Pacific Exposition (San Francisco, 1915) were bewitching, and many a smaller American city, not to mention world capitals like Paris, had put on successful shows.

Yet New York City, financial center of the nation, and its reputed cultural center as well, had housed no fairs since 1853, when it had responded in a low key to the first great international industrial fair of modern times, Prince Albert's Crystal Palace exposition in London, 1851. But when the sleeping giant was roused, it produced a spectacle that no one who was there has forgotten, and that remains a touchstone for future exhibitors.

The Depression of the 1930s was not yet shaken off, and business needed a stimulant, when in May 1935 a Jackson Heights engineer, Joseph F. Shagden, and a distant relative of the President, Edward F. Roosevelt, presented the idea of the Fair to an appreciative group of New York businessmen. A steering committee began meetings in June and by October a nonprofit corporation for educational purposes (profits to go to city and state charities) had been formed. After a temporary bank loan, the Fair Corporation sold about 27 million dollars' worth of bonds (at four percent, payable in 1941) to businesses, unions and the public, and received sizable private contributions from local millionaires.

Although the Flushing, Queens, locale chosen for the Fair was the geographical and population center of the city, it was still most unusual: the activities of the Long Island Rail Road, in conjunction with the indifference of contractors and politicians, had turned the marshy area into a garbage dump of monumental proportions, characterized by F. Scott Fitzgerald in his 1925 novel *The Great Gatsby* as "a valley of ashes—a fantastic farm where ashes grow like wheat into ridges and hills and grotesque gardens . . . bounded on one side by a small foul river" (the Flushing River).

The clearance of this site for the Fair was the largest land reclamation project in the eastern United States. (Grand Central Parkway, connecting the Triborough Bridge to eastern Long Island, had already cut through the dump in 1932.) Park planning began in January 1936, the groundbreaking ceremonies were held on June 29, 1936, and the land was graded by March 1937. Another remarkable aspect of the enterprise was that, for the first time in history, firm arrangements had been made to turn over the exposition grounds to the local government after the Fair for a municipal park. Through thick and thin, energetic New York City Parks Commissioner Robert Moses (later to be president of the 1964/1965 fair at the same location) never lost sight of his own goal: Flushing Meadows Park.

Eventually the city spent about 26.7 million dollars for reclamation and its permanent Fair building. New York State, which offered its own temporary building and the permanent amphitheater that housed the *Aquacade*, spent about $6.2 million; the federal government, some three million. Foreign nations paid between 30 and 35 million for their pavilions. The Fair Corporation's

construction outlay was about 42 million, and 52 million came from other sources (exhibitors, concessionaires and so on). Total investment: about 160 million dollars. It was decided that 40 percent of daily receipts (as well as rentals, etc.) would go toward paying off the Corporation's bonds; the first two million dollars of net revenue was to be given to the city outright for the final work in preparing the park after the Fair; the next 1.7 million would also go to the city, for extending the Independent subway system up to the Fair grounds; then any net revenue remaining would be for local charities.

It was hoped that visitors to the Fair would set about a billion dollars flowing through New York City, and that the City would lose some of its bad reputation for aloofness and remoteness from the rest of the country. When it appeared that it would be possible to open in the spring of 1939, a patriotic pretext was hit upon for the Fair: opening day, April 30, would be the 150th anniversary of Washington's inauguration as President at Federal Hall in New York City. A huge statue of the Father of His Country was commissioned from the revered sculptor James Earle Fraser, and Washington's name and face appeared here and there at the exposition. But the only real George Washington memorabilia were relegated to a modest and remote pavilion in the Amusement Area, the Sons of the American Revolution Building. And there was no chance of being misled as to the purpose of the Fair if you scanned the roster of the Corporation.

The Executive Committee of the Board of Directors consisted of: Winthrop W. Aldrich (chairman of the board of Chase Manhattan Bank), Mortimer N. Buckner (chairman of the board of the New York Trust Company), Floyd L. Carlisle (chairman of the board of the Consolidated Edison Company), John J. Dunnigan (majority leader of the New York State Senate), Harvey Dow Gibson (president and chairman of the board of Manufacturers Trust Company), Mayor Fiorello La Guardia, George McAneny (chairman of the board of the Title Guarantee and Trust Bank), Thomas H. McInnerney (president of the National Dairy Products Corporation), Bayard F. Pope (chairman of the board of the Marine Midland Corporation), Percy S. Straus (president of Macy's), Frank J. Taylor (the City Comptroller), Matthew Woll (the third vice-president of the American Federation of Labor) and—easily the most fascinating personality directly associated with the Fair, and its president both years—Grover Aloysius Whalen.

At this time Whalen was chairman of the board of the Schenley Products Company, but he had a long record in the field of merchandising and business consultation, having been associated with Coty Perfumes (which had a prominently situated pavilion at the Fair), John Wanamaker and the IRT subway system, to name just a few firms. As far back as 1919 he was already known as a gracious welcomer of official visitors to New York City, and it was he who arranged the tumultuous reception for Lindbergh in 1927. From the end of 1928 to the middle of 1930 he was the City's Police Commissioner; in the latter year he became notorious for his violent disruptions of left-wing gatherings. As local head of the National Recovery Administration in the early days of the New Deal, he settled some 130 labor disputes. A man of infinite tact, charm and connections, he was invaluable to the Fair both as a figurehead and as an indefatigable worker and organizer.

One of Whalen's most remarkable contributions was in rounding up foreign exhibitors in a period of financial stress and gathering war clouds. President Roosevelt had issued a hearty invitation, and in 1937 the Bureau International des Expositions in Paris had decreed that the New York Fair would be *the* 1939 exposition endorsed for participation

by its signatory nations, but there was still tough practical resistance to be overcome during Whalen's European trip. Curiously enough, the Soviet Union was the first foreign country to comply (and this despite Whalen's anti-red record!), and allotted four million dollars for its pavilion, which a Gallup poll later showed to be the most popular in the foreign area. Western Europe, thus challenged, could not lag behind. Altogether, a record 60 nations and international organizations took part in the Fair. Germany was conspicuous by its absence, no doubt because it was saving its money for the war—although it was also reported that Hitler would never exhibit in a city whose mayor had called his country "a museum of horrors."

It was also remarkable that 33 states of the Union and territories responded favorably to the invitation of Governor Herbert E. Lehman. All this cooperation enabled the Fair Corporation to dwell on another of their goals: to demonstrate the interdependence of all states and countries in the twentieth-century world.

But if businessmen, diplomats and patriots had created the basis for the Fair, it was a different group of men, a new breed of the Thirties, who gave it its physical aspect, a great deal of its spirit and its abiding theme: "Building the World of Tomorrow." These were the industrial designers, men like Norman Bel Geddes, Raymond Loewy, Henry Dreyfuss and Walter Dorwin Teague, who, coming from careers in theatrical design or other artistic backgrounds, had persuaded the large American corporations that beauty—of the Bauhaus and Art Deco persuasion—could sell their products. Fashioning hundreds of commodities from toothbrushes to ocean liners in clean, uncluttered lines and surfaces, they had added the word "streamlined" to the consciousness of the country.

The Fair might well have been a stodgy curio show had the industrial designers not won the day little by little, assisted by architects, painters and sculptors who had already made a mark in civic projects of the Thirties such as Rockefeller Center or who had grown to artistic maturity under the auspices of the federal projects of that decade. Fortunately, not only did the Fair Corporation heed the suggestions of these leading designers, not only did these men work on the pavilions of many private companies, but, what is more, the Board of Design of the Fair, established in the spring of 1936, was imbued with their principles and drew up rules and guidelines that helped immeasurably to make the exposition perspicuous in organization and tasteful in execution.

With the spires of Manhattan visible in the distance it was felt desirable to give the Fair a low silhouette, broken here and there by towers and pylons, and, of course, by the Trylon, the highest structure on the grounds. The pavilions were to be outspoken exhibition architecture, imaginative but not alarming (unfavorable public reaction to "excesses" of 1933 Chicago fair buildings was vividly recollected). Replicas of historical buildings and extremely traditional structures were outlawed, except in the Government Zone (especially the Court of States) and the Amusement Area. Since windows would eat up exhibition wall space and would make the buildings too hot in the middle of the summer, air conditioning was generally used and most of the pavilion exteriors had extensive unbroken surfaces, relieved by murals or relief sculpture. Signs were not allowed to protrude.

The Fair Corporation Board of Design conceived and constructed a number of buildings at an early stage to show the way—chiefly its own administration and operations buildings as well as those that were to house the focal exhibits of the various zones (these focal buildings also had a multiplicity of small exhibitors), but also a few for large private exhibitors. The Board of Design buildings were characterized by steel frames and

curtain walls of gypsum board, wire lath and stucco. Many of the private architects followed suit, but there were also interesting variations. For instance, asbestos boards were used on the AT&T building, redwood on the Contemporary Art Building, a stainless-steel shell for the U.S. Steel Building, and so on. In many cases native materials or products (marble, tile) were used on foreign and state buildings. The constructions of the Design Board and of the private American corporations were often as much pieces of sculpture as of architecture, and though usually "abstract," would sometimes be partially or wholly representational or emblematic, as with RCA's radio-tube shape or the twin prows of the Marine Transportation Building. All in all, there were about 375 structures of all types at the Fair, including 100 major exhibit buildings (about a third done by the Board of Design) and 50 major amusement concessions.

Sound was also regulated, no outside spiels being countenanced unless deemed essential to the show.

The regulation of color, as far as it went, was of great interest. At the 1933 Chicago fair, the famous designer Josef Urban had been a sort of color czar, given wide powers to oversee the effects. In New York, the Board of Design laid down topographical prescriptions to exhibitors in a large central area of the Fair. The Trylon and Perisphere were to be dead white, the immediately surrounding area (Theme Center) off-white. The main axis of the Fair (Constitution Mall) was conceived in reds, growing deeper—from rose to burgundy—with remoteness (in a northeasterly direction) from the Theme Center. The Avenue of Patriots, veering off to the north from the Theme Center, would have basically yellow pavilions, ending in deep gold; the Avenue of Pioneers, heading east, would have blue, ending in deep ultramarine. The curved thoroughfare that connected the three ends was called Rainbow Avenue and had appropriately shifting colors. Naturally, slight variations as well as murals and sculptures relieved any possible monotony, but there were also many subtle tricks played with complementary colors and other relationships.

Night lighting was also carefully planned. Floodlighting was allowed only on the Perisphere and a very few other spots. A searchlight canopy (the searchlight had been one of the thrills at Chicago in 1893!) played over the Court of Peace near the Federal Building. Otherwise (not counting fireworks and special light shows over the two main sheets of water) only relatively restrained—though bright, colorful and inventive—illumination was allowed. One of the triumphs of the Fair was the new white fluorescent street lighting, but in addition many special effects (such as partially buried high-intensity mercury capillary lamps under rows of trees that made the leaves glow green) were heartily applauded.

Many of the suggestions, both stylistic and practical, for illumination and light fixtures came from the 1937 Paris exposition (Arts et Techniques), which was visited by New York Fair personnel. Other Parisian ideas that were influential in Flushing Meadows affected the nightly *son et lumière* shows, the various means of transportation within the Fair grounds, the use of exterior murals and the general tone of the profusely scattered relief and free-standing sculptures and applied ornament in the Moderne, or Art Deco, style. Even the layout of the main geographical axis of the New York Fair—from the Theme Center to the Federal Building—may have been inspired by the 1937 French example.

But an absolutely new feature of the 1939 Fair was called for by its almost unprecedented magnitude (it covered 1216½ acres, extending about 3½ miles south from Flushing Bay, with a maximum width of 1¼ miles; only the 1904 St. Louis

fair was slightly greater in area). This feature was the system of zoning by exhibit categories. The seven geographical zones were [my numbering] (1) Communications and Business Systems and (2) Production and Distribution (these two flanked the Theme Center fairly symmetrically), (3) Community Interests and (4) Food (these balanced each other a little farther away from the Theme Center), (5) Government (grouped around the Lagoon of Nations at the end farthest from the Theme Center), (6) Transportation (across the Grand Central Parkway from the Theme Center) and (7) the Amusement Area (grouped around the lake, and across World's Fair Boulevard—later Horace Harding Boulevard, now the Long Island Expressway—from the main part of the grounds). All of these but Government and Amusement had a "focal exhibit," a noncommercial display prepared and run by the Fair Corporation, in one building within the zone. There were also two exhibit categories, (8) Medicine and Public Health and (9) Science and Education, that were practically all focal exhibit with no geographical extension; they were housed in one building complex inside the Community Interests Zone. This zoning was strictly adhered to, although as things turned out, and for different reasons, New York City, New York State, Florida, Sweden and Turkey were located outside the Government Zone.

The lagoon and the lake had been created on those marshy areas that would have been hardest to fill. The highest ground in the Fair area was where the Theme Center, the New York City Building and Ford and General Motors were located.

The Fair opened on schedule on April 30, 1939; the paying customers on that day numbered 198,791. General admission was 75 cents for adults (rather high in the days when the subway ride to the Fair cost a nickel) and 25 cents for children from three to 14. Season tickets and other special arrangements were offered. There were separate admission charges to a number of exhibits and concessions, comprising possibly a fourth of the Fair; it was estimated that a visitor who went to all of these would have to pay a total of $14.15. The grounds opened daily at 9 A.M., the exhibit buildings remaining open until 10 P.M., the Amusement Area until 2 A.M. In addition to the permanent exhibits, there were numerous daily events and scores of special celebrations and occasions, such as a bloodless bullfight at the Cuban Village in the Amusement Area, with Sidney Franklin as matador. There were also unlooked-for controversies, as when a number of labor unions engaged in pavilion construction and maintenance were accused of extortionate practices that dismayed some exhibitors and drove away others.

The purpose of the present book, however, is to offer not a chronicle of the transitory happenings, but an extensive record of the physical aspect of the Fair, emphasizing building exteriors and outdoor long views. It also gives a sampling of the interior exhibits and demonstrations, which made use of the latest techniques of museum curators as well as those of advertisers and industrial designers, most notably the diorama or large working model, a European development first made popular with American viewers at the 1933 Chicago fair. A number of the entertainments in the Amusement Area are also presented, but generally only those of some distinction or special interest (there is no need to show one more roller coaster, sky ride, auto dodgem, freak show, striptease act, penny arcade, shooting gallery or archery range). The individual pictures and captions included here, used in conjunction with the Index, recreate the abiding image of the Fair and catalogue some of its best-remembered artistic and scientific achievements.

The captions and Index will also indicate what

Leo Friedlander's four statues representing the *Four Freedoms* stood on Constitution Mall behind the statue of George Washington, near the Lagoon of Nations. This pre-Fair-opening shot by Richard Wurts shows a rather sulky Freedom of the Press being moved to her appointed station.

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a magnificent roster of varied talents was represented at this Fair: composers like Kurt Weill, Aaron Copland and Arthur Schwartz; theatrical producers and directors like Billy Rose, Mike Todd, John Murray Anderson and Margaret Webster; sculptors and painters like James Earle Fraser, Jo Davidson, Alexander Calder, Rockwell Kent and Paul Manship; the above-mentioned industrial designers N. Bel Geddes, Dreyfuss, Loewy and Teague; and architects like Alvar Aalto, Skidmore & Owings and Shreve, Lamb & Harmon. All of these were established masters displaying fresh facets of their skills and genius. But there were also younger men who would become famous at a later date: the film director Joseph Losey; the architects Morris Lapidus, Oscar Niemeyer and Sven Markelius; and a number of others.

The emphasis in this book is on the 1939 aspect of the exposition, since only in its first year did the Fair fully represent the original wishes of its planners. Well liked as it was in its initial season (ending October 31, 1939), its attendance was not nearly as great as had been hoped (nor were Manhattan shopkeepers satisfied with their profits from Fair visitors), and the financial situation of the Fair Corporation seemed to call for drastic measures.

Harvey Dow Gibson, who had been the finance chairman on the Fair's Board of Directors, became chairman of the board and business manager. (He had also had a public career, serving as American Red Cross commissioner for all of Europe in 1919.) Although Grover Whalen stayed on as president, Gibson's likeness replaced Whalen's in the 1940 edition of the *Official Guide Book* and Gibson's spirit made itself felt everywhere. The adult admission price was lowered to 50 cents. Rents to exhibitors were also reduced, and many new concessions, generally rowdier, were brought into the Amusement Area, which was renamed the Great White Way. Buildings in the main part of the grounds were reassigned in a clear bid for broader tastes. The *Guide Book* was completely revised: all exhibits (except amusements) were listed in one alphabetical order, all division into, or reference to, zones being completely abandoned; and the style of writing was greatly popularized (compare the 1939 "In Steinmetz Hall [of the GE Building]—vivid lightning, thunderous noise, ten million volts flashing over a 30-foot arc" with the 1940 "In Steinmetz Hall, 10,000,000 volts of man-made lightning leap 30 feet through the air with a roar of thunder, scaring the daylights out of you").

Another big difference in 1940 was that the Second World War was in progress when the Fair reopened on May 11. Whalen had revisited Europe and had done wonders in keeping the foreign contingent together, but in 1940 the Soviet Union (branded as an aggressor in Finland) was gone, and Norway and Denmark were represented only by local concessions. (Argentina, Siam and the state of Georgia had also pulled up stakes.) Great Britain, Poland, Czechoslovakia and Finland had reminders of the world situation among their exhibits. The Fair Corporation smugly congratulated Americans on the country's noninvolvement in the war, and the blessings of "Peace and Freedom" replaced the "World of Tomorrow" as a watchword for the exposition.

When the Fair finally closed, on October 27, 1940, it was clear that the Corporation would have to declare bankruptcy, attendance having brought in only about 48 million dollars from about 45 million admissions, while the Corporation's expenses had exceeded 67 million. New York City forced its claims to the money it had been promised as the first slice off the receipts. Gibson attempted to interest the federal government in the grounds as a site for a military training camp, but Robert Moses saved his park. (After various protracted fiscal operations, the Corporation was dissolved in 1945.)

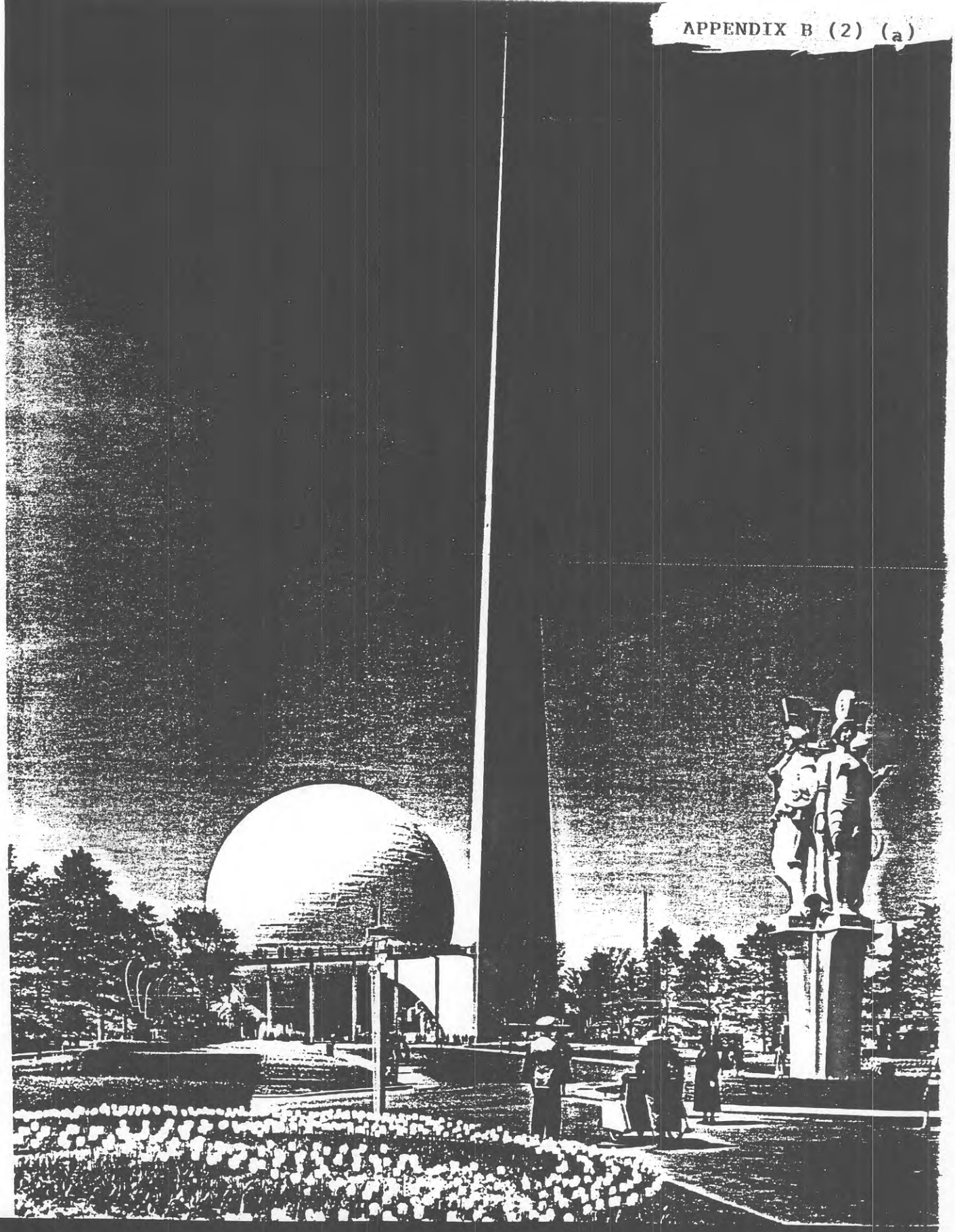
In the new park, the New York City Building,

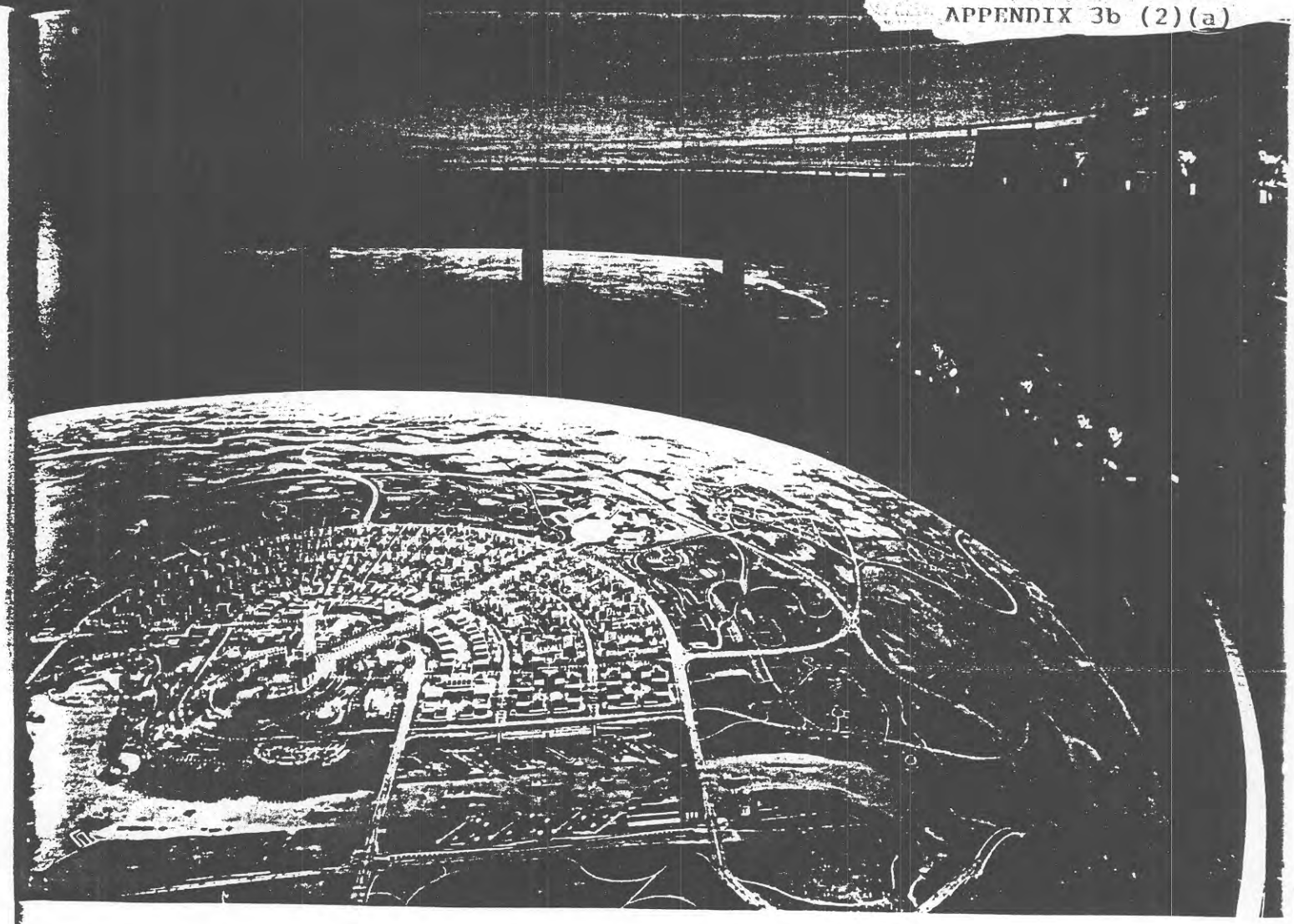
intended from the start as a permanent structure, became a skating rink. After the Second World War it housed the United Nations while that organization's permanent Manhattan headquarters was under construction. In 1964/1965 another World's Fair was held in the park, with the old New York City Building and New York State Amphitheatre (it too a permanent structure) filling roles analogous to those of 1939/1940.

In 1976, Flushing Meadows Corona Park, though by no means the elegant haunt and the landscape architect's dream it had resembled in the blueprints of the mid-1930s, was a decently maintained and well-policed recreation area put to good use by local residents. A mock Revolutionary battle was enacted (not reenacted) there as part of the nation's bicentennial festivities. The New York City Building was occupied by the small Queens Museum, and the Amphitheatre was the entrance and service area of a paid bathing establishment on Meadow Lake. Assorted relics of the 1964/1965 fair included the Unisphere (where the Trylon and Perisphere had stood), the New York State Pavilion (housing the Queens Playhouse and a roller-skating rink), the United States Building (a wreck), The Singer Bowl (now Louis Armstrong Stadium), the Port Authority Heliport (not in use) and the Hall of Science (still in use in its original role). Most of the terrain that had been the Transportation area in both fairs was occupied by the Queens Zoo, where, it was repeatedly claimed, the animals were not sufficiently protected from vandalism.

As mentioned above, the present book follows the 1939 *Official Guide Book* in its observance of zones, but does not order the zones, and the buildings within the zones, in strict alphabetical order as the *Guide Book* did. Instead, the sequence of zones here is based on considerations of their intrinsic interest then and now (for instance, at the time Transportation was clearly the most popular of the zones, taking them as entities), and the sequence of buildings and sites is based on considerations of visual interest. Another departure from the 1939 *Guide Book* is the decision to be more strict here in the geographical presentation, leaving Sweden and Turkey in the Food Zone, and Florida in the Amusement Area, where they were actually located and where visitors to the Fair actually got to see them. Free-standing statues and other monuments are discussed here according to the zone in which they stood, at the end of the respective sections.

The book does not attempt to be complete; the availability of good photographs and convenience of length and format had to be taken into account. Just about all the buildings and sites that were best liked by the public and the critics, and are best remembered by old-timers, will be found here, and it is believed that a judicious cross section of the Fair has been presented. The omission of any company or organization's exhibit in no way constitutes a negative judgment as to its appearance, value or significance.

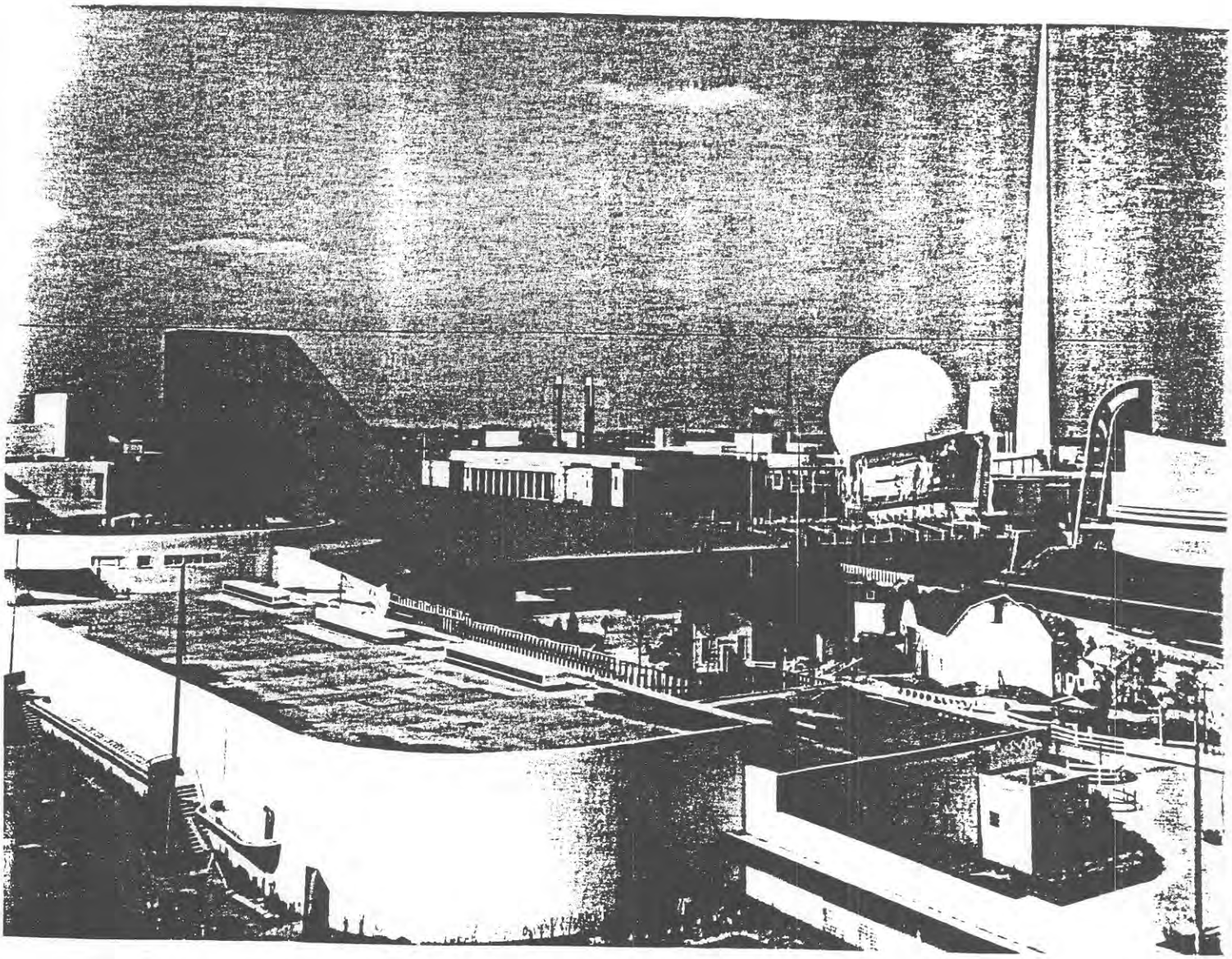




THEME CENTER, CONSTITUTION MALL, ADMINISTRATION, GENERAL FEATURES

1. The Theme Center, that is, the area epitomizing the spirit and motto of the Fair, "Building the World of Tomorrow," comprised the Trylon and Perisphere and the immediately adjacent grounds. The 700-foot-high Trylon (triangular pylon) and the 200-foot-wide Perisphere, both painted pure white (outlying structures in the Theme Center were off-white), were the work of the architectural firm of Harrison & Fouilhoux (soon to participate in Hunter College and to do the African Plains at the Bronx Zoo), which submitted over a thousand sketches for this focal site of the Fair. Reproduced on thousands of different miniature souvenir items, the Trylon and Perisphere were regarded as the most imposing symbol for any fair since the Eiffel Tower of 1889. The sculpture at the right, in the Court of Power, is John Gregory's *Four Victories of Peace*, representing Wheels, Wings, Wheat and Wisdom. A hand-pushed touring chair is seen near the statue. In the foreground are some of the million tulips and other bulbs donated by Dutch growers.

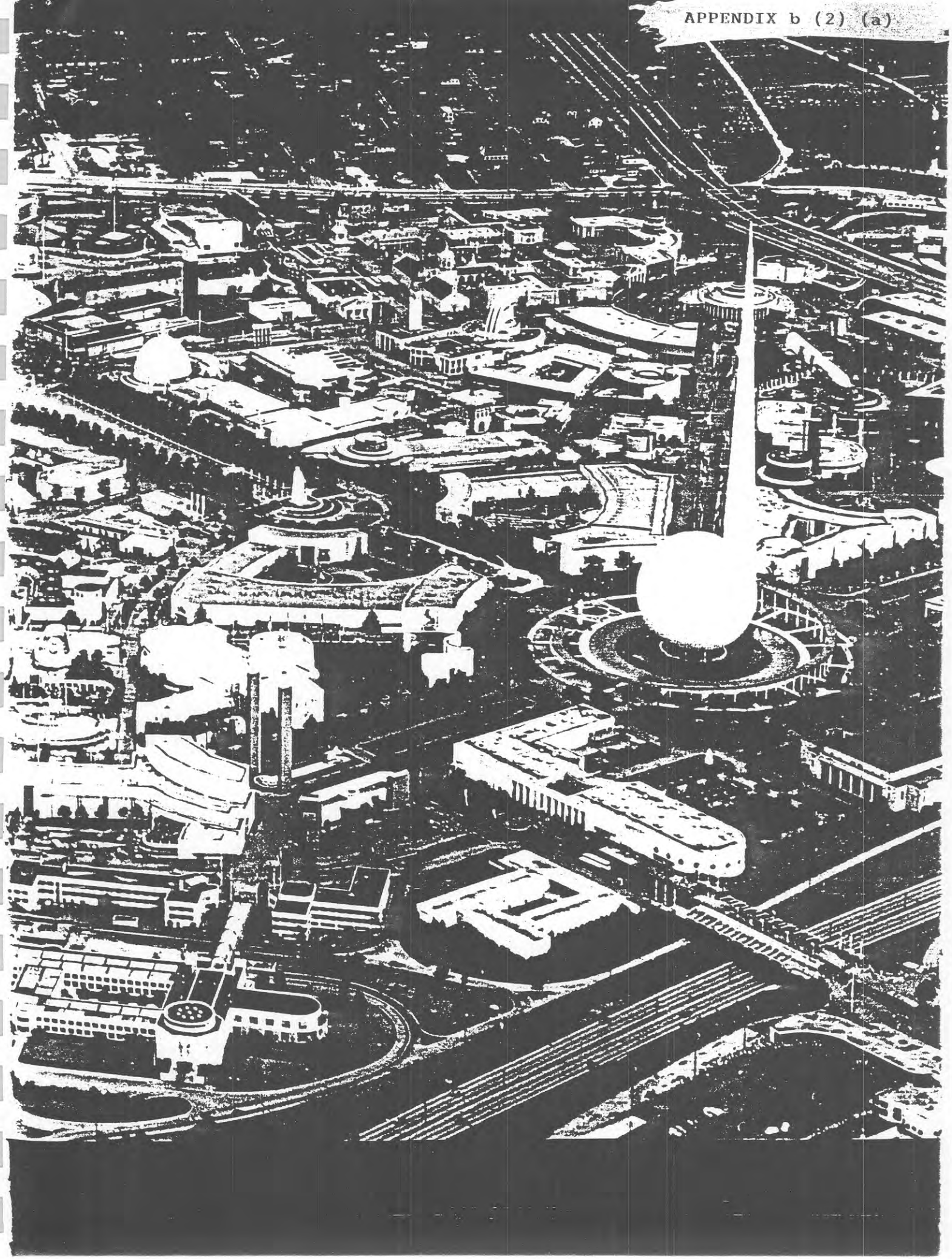
2. Visitors rode part way up the Trylon on what was then the world's highest escalator, then entered the Perisphere (interior design by Henry Dreyfuss), stepping onto one of two moving rings, from which they viewed the vast diorama of Democracity, a planned urban and exurban complex of the future. The accompanying musical score by William Grant Still was conducted by André Kostelanetz and the narration spoken by the popular newscaster H. V. Kaltenborn. At the end of the six-minute show, film projections presented several groups of happy farmers and workers. Afterwards, the visitors walked back to ground level via a ramp called the Helicline.

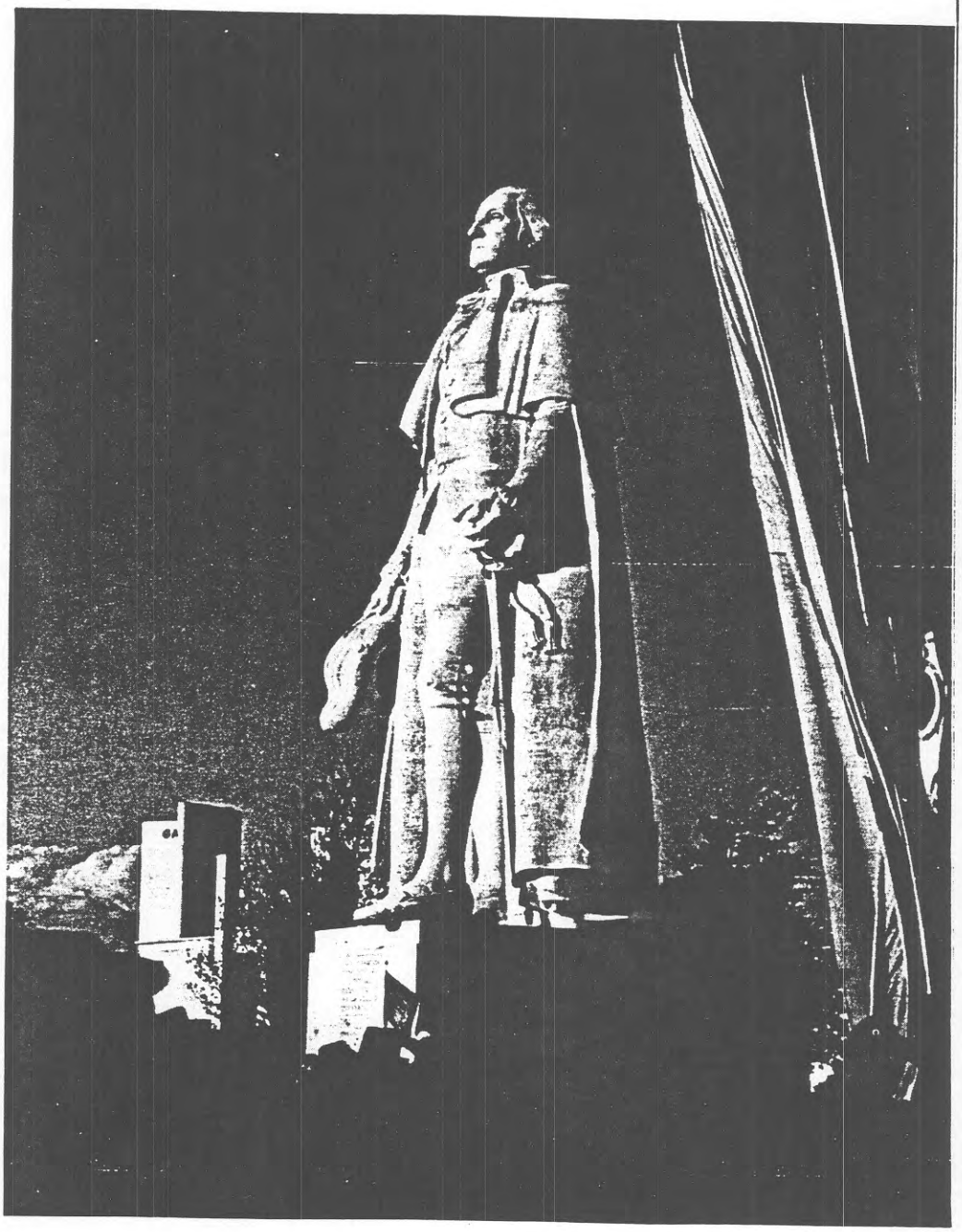


32. The Firestone Tire & Rubber Company Building (architects: Wilbur Watson & Associates; designer: George W. McLaughlin) included a small tire factory, dioramas of the company's rubber plantations in Liberia, and a full-scale model farm in which pneumatic tires were applied to everything possible.

COMMUNICATIONS AND BUSINESS SYSTEMS

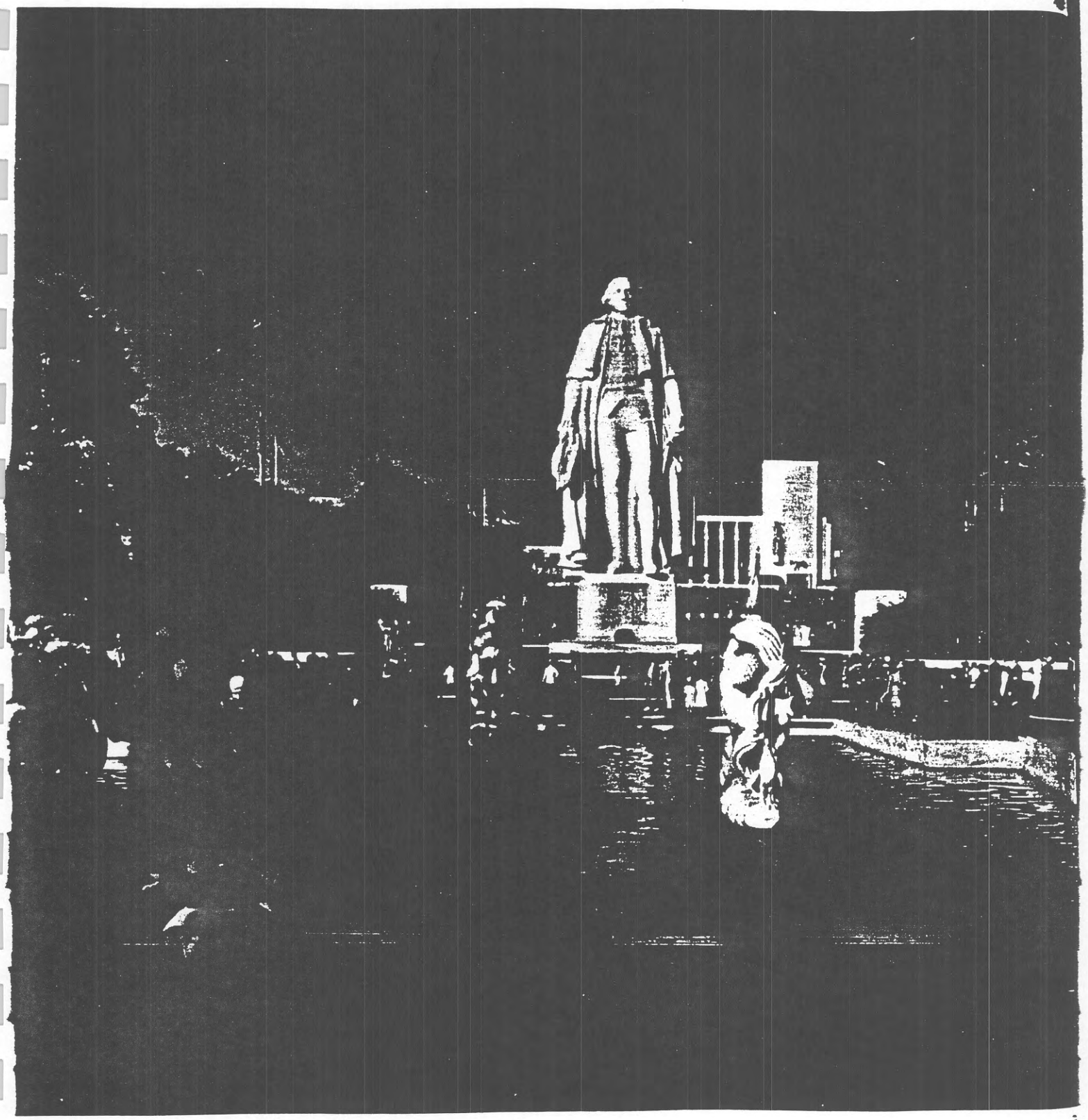
38. Below the Theme Center is the double structure of Business Systems and (with the rounded end) Business Machines and Insurance, in which IBM showed modern paintings from 79 countries. To the left, with protruding wings, is the Masterpieces of Art Building, which housed a priceless international loan show of paintings. The dark-roofed complex to the left of that is the Administration-cum-Press-cum-Post Office group. The long light building extending above that is the Communications Building, at the left end of which is the Star Pylon and at the right end of which are seen the tall twin pylons that stood in the Court of Communications. Just to the right of and below them is the relatively small Crosley Radio Corporation Building. Cut into by those pylons (in the photo) is the American Telephone & Telegraph Building, and to the upper left of that, on the axis that bisects the Communications Building, is the smaller RCA Building. Various other Fair zones are also seen.





8. All four *Moods of Time* (Night and Morning are at the extreme left and right, respectively; the others are Day and Evening) are seen in the Constitution Mall basin in front of Washington Square, site of the statue of Washington as he looked at his 1789 inauguration in New York (the Fair ostensibly commemorated the 150th anniversary of this event). The sculptor was James Earle Fraser, most famous for his design of the Indian-head nickel. Closing the vista is the United States (Federal) Building.

9. A closer view of the statue. At the left are the pylons of the Gas Industries Building in the Community Interests Zone of the Fair.



APPENDIX 3b (2) (b)

Today

Tomorrow
An army of designers transforms a Tudor house in Morris Township into a showplace.

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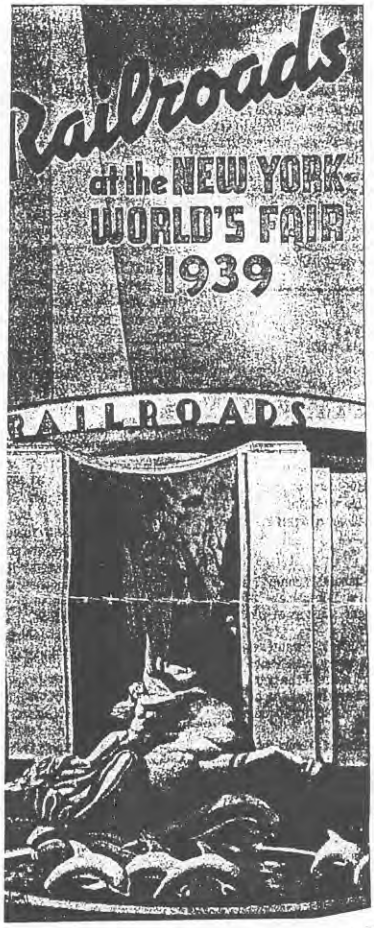
The Star-Ledger



A fair full of wonder

THE '39 NEW YORK WORLD'S FAIR, MAYBE THE GREATEST EVER, OPENED 60 YEARS AGO TODAY

No matter what I had heard about the Futurama, nothing compared to seeing it for myself: all the moving parts, all the lights and shadows, the animation, as if I were looking at the largest most complicated toy ever made! In fact this is what I realized and that no one had mentioned to me. It was a toy that any child in the world would want to own. You could play with it forever.

— "World's Fair," E.L. Doctorow

By Peter Genovese
STAR-LEDGER STAFF

Ray Bradbury was 19 when he hopped a Greyhound bus in Los Angeles bound for New York City. It was a miserable trip — "no air conditioning, no toilets," he recalled in an interview.

The budding writer, who would become famous for "Fahrenheit 451," "The Martian Chronicles" and other works, stayed in the YMCA in Manhattan for $5 a week. It didn't matter. His destination was a shimmering, futuristic city that rose improbably from the so-called Corona dumps in Queens.

"It was so beautiful," Bradbury said of the 1939 New York World's Fair. "I didn't want to leave."

Those who were at the fair, which officially opened 60 years ago today, wished they never had to leave. Bradbury was there 10 days straight. Newark native Herb Rolfes, co-author with Larry Zim and Mel Lerner of "The World of Tomorrow," one of the classic books on the 1939 fair, was there twice. John Andrews of Nutley, 10 years old at the time, visited the fair eight times, with his grammar school class and family.

"The 1939 fair is the most popular fair for collectors," Andrews said. "There's a special affection for that fair that you don't have with any other. I was at the '64 fair, too. '39 was better."

The '39 New York World's Fair even casts a magical spell on those, like Lisa Eisenstein of Readington and Tim Ferrante of Keyport, who were not there but who avidly collect World's Fair memorabilia. Eisenstein's father, Abe Kessler, worked at the fair; he fixed the little cars you could ride around the 1,216-acre grounds. Ferrante, who publishes a magazine devoted to pinball machines and arcade games, always carries a 1939 half dollar in his pocket as a reminder of the fair.

"If I could give up the rest of my life for one day at the 1939 World's Fair," he said, "I would do it."

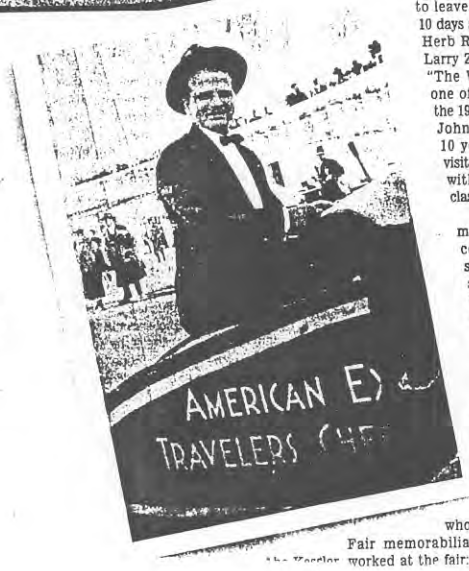
The fair, ostensibly held to commemorate the 150th anniversary of George Washington's inauguration in New York City, actually ran two years — 1939, with the theme of "The World of Tomorrow," and 1940, with a theme of "For Peace and Freedom." The winds of war touched the event. Germany contracted for a pavilion, but, faced with protests from anti-Nazi groups in America, withdrew from its commitment in 1938. However, Italy, Russia and Poland all had pavilions.

By all accounts, the 1939 World's Fair was a grand show. Who could forget General Motors' Futurama, which whisked visitors in moving chairs above a dazzling miniature city? It was "the most popular attraction at the fair," according to one account, "something so new and wonderful that a new and rather wonderful word has been coined to describe it."

Other highlights included the 30-foot illuminated lighting bolt in front of the General Electric building; the Glass Incorporated building, with its 107-foot tower of glass block set off by blue plate-glass fins, and ConEd's block-long City of Light diorama.

And then there was the Parachute Jump, where the

PLEASE SEE FAIR, PAGE 34



Memorabilia from the 1939 New York World's Fair:

Above, a copy of a railroad guide for the fair.

Above right, the cover of the official guidebook displays the fair's two best-known symbols: the Trylon and the Perisphere.

Right, a photo taken at the fair of Abe Kessler, who worked on the cars that visitors could ride around the grounds.

Far right, Popular Science magazine devoted six pages

Fair

CONTINUED FROM PAGE 29

Full of wonder

brave of heart would be attached by harnesses to parachutes, raised 250 feet in the air and dropped — gently, mind you — to the ground.

"I didn't go on it," Bradbury said, laughing. "I was afraid of heights."

Today, the only things left of the fair are the Parachute Jump, now at Coney Island, and the New York City Building, now the Queens Museum.

The fair's two major landmarks, its enduring symbols, were the Trylon and Perisphere, the former a slender, three-sided 700-foot-high spire; the latter 200 feet in diameter, the largest globe ever made by man. Novelist E.L. Doctorow, in "World's Fair," saw them through the eyes of a boy visiting the fair for the first time:

"Even from the elevated station I could see the famous Trylon and Perisphere. They were enormous. They were white in the sun, white spire, white globe, they went together, they belonged as some sort of partnership in my head. . . The pictures of them hadn't suggested their enormity. They were the only white objects to be seen. They were dazzling. They seemed about to take off, they looked lighter than air."

An estimated 43 million visitors visited the fair, which encompassed 300 buildings and pavilions, 80 restaurants, 10 entrance gates and 50,000 benches. A total of 33 states and 58 countries had pavilions. There were 231 shows in the Amusement Zone — "Amazons, midgets, showgirls, parachute jumps, crazy dance floors, monkeys, electric shocks, electric eels, rocket rides, peep shows, shooting galleries, enchanted forests," according to one account.

More than 500 motion pictures — full-length Hollywood features, cartoons, educational and industrial films — aired daily in 10 theaters. The Magna Carta was on display at the British pavilion; the "World's Largest Medicine Chest" was the highlight of Pharmacy Hall.

Andrews remembers the working derrick at the Petroleum Industry Building ("it was banging away, banging away"), the statue of the worker holding aloft a red star at the USSR pavilion (New Yorkers dubbed the statue the "Bronx Straphanger"), and the Marine Transportation Building, distinguished by two surreal eight-story-high superliner prows that seemed to slice through the building itself.

"And I got my free pickle at the Heinz building," he recalled.

Most of all, though, Andrews remembers the fair at night. The buildings were ablaze with multi-colored light. The nightly fireworks were so spectacular one newspaper described them as "the most gorgeous fireworks set off on earth since day one."

Admission to the fair was 75 cents for adults, 25 cents for children, although on certain days kids got in for a dime. There were wonders galore. Seven-inch TV sets at the RCA Building. Nylon stockings at DuPont, where Miss Chemistry, a model clothed head to foot in chemically based products, held court. The World's Largest Typewriter — a 18-foot-long, 14-ton working Underwood — dazzled visitors to the Business Systems and Insurance Building.

"My father was a cattle dealer," said Bill Haller, who owns Haller Machine Inc. in Middlesex Borough. "Naturally, they went to the Borden pavilion and saw Elsie the Cow."

"I remember the Transparent Man; you could see all his nerve endings and neurons and internal organs," Bradbury said.

"My father said the grounds were so beautiful, with all the flowers and plants," Eisenstein said. "They were always sweeping it, keeping it clean. '39 is like a dream. It's like Dorothy going to Oz. It was a magical world."

The 1939 World's Fair is the most popular world's fair for collectors, both because of the aura surrounding it and the sheer amount of souvenirs it generated. Bill Haller owns glasses, dinnerware, teapots, banners, mugs, vases, umbrellas, canes and pamphlets, plus scores of photos his parents took when they were there.

Among the most sought-after collectibles, according to Rolfes, who had a shop in Whitehouse Station devoted to World's Fair items, are the RCA World's Fair radio and Bakelite napkin rings.

"Some 1939 World's Fair posters are going for $3,500, $4,000," said Rolfes, who now lives in Florida.

The fair, according to Rolfes "was a triumphant event, brilliantly conceived on a colossal scale."

"It was tremendously exciting," Bradbury said. "I just loved it." He laughed. "I think I hyperventilated the whole time."

Curriculum Frameworks:

KNOWLEDGE, SKILLS, AND ABILITIES

Social Studies

Board of Education of the City of New York

Vision Statement

SOCIAL STUDIES

An effective social studies program provides the foundation for a democratic society by developing the skills necessary for students to participate as informed, responsible citizens in an era of rapidly changing technology. Among these skills, social studies instruction develops critical thinking by enabling students to make decisions about issues confronting themselves, society, and the interdependent world. Students will come to these decisions as a result of studying a body of knowledge that includes history, geography, economics, political science, and the other social sciences while drawing upon relevant interdisciplinary sources.

Social studies instruction fosters multicultural education by promoting respect, intergroup cooperation, and appreciation for the cultures of diverse groups. It recognizes that all students, regardless of their primary language or special needs, can learn and participate to their maximum potential.

Introduction

SOCIAL STUDIES

The Social Studies Frameworks support the content, concept, and skill goals of the New York State social studies syllabus. However, the Frameworks are not intended to be a scope and sequence, but rather a first and crucial step toward assisting districts and schools in developing and supporting social studies instruction.

As these Frameworks are incorporated into social studies programs, a number of important elements of effective instruction should be noted. Among the most important are: active learning, multicultural education, critical thinking, and skills development.

In the social studies classroom of the 1990s and beyond, students should be viewed as active learners. They should learn by doing and experiencing, rather than learn by being told. Hands-on approaches such as cooperative learning, simulation, and role-playing foster active learning.

As the population of the United States grows increasingly diverse, the integration of basic principles of multicultural education grows more important. Specifically, students in social studies classes should have the opportunity to view events, ideas, and themes from multiple—rather than narrow and ethnocentric—perspectives. Students should also have the opportunity to examine the fruits of the most recent scholarship, revealing the role played by groups that have largely been omitted from the traditional social studies curriculum.

If social studies instruction is to be truly meaningful, lessons should focus on the development of critical thinking. Students should be challenged to become problem explorers, decision makers, and divergent thinkers. Classroom activities should motivate students to search out and deal with authentic oral and written sources, use techniques of inquiry and discovery to assess these sources, and arrive at conclusions supported by the evidence. Moreover, students should be encouraged to ask questions. Eli Wiesel, the Nobel Prize winner and Holocaust scholar, often relates the story of his mother, who upon his arrival home from school each day, would not ask, "What did you learn in class?" but rather, "What questions did you ask?"

Finally, the social studies classroom should be viewed as a laboratory for developing skills for life. Among the most important of these skills are map reading, as well as chart, graph, and cartoon interpretation. Of equal importance are the communication skills of reading, writing, speaking, and listening.

Grade 9

GLOBAL STUDIES | **AFRICA, SOUTH AND SOUTHEAST ASIA, EAST ASIA, LATIN AMERICA AND THE CARIBBEAN, AND THE MIDDLE EAST**

Students will

- gain an understanding of the concepts of cultural diffusion and interdependence and the methods of acquiring and analyzing information needed to undertake a study of world regions in a global context.
- analyze and interpret geography-related data to hypothesize, make predictions, and draw conclusions about the impact of geography on the development of Africa, South and Southeast Asia, East Asia, Latin America and the Caribbean, and the Middle East.
- demonstrate an understanding of the major events that shaped present conditions in the pre-nation-state histories of Africa, South and Southeast Asia, East Asia, Latin America and the Caribbean, and the Middle East.
- examine the significant political, economic, and social changes from the advent of nationalist movements to the development of modern nation-states in Africa, South and Southeast Asia, East Asia, Latin America and the Caribbean, and the Middle East.*
- examine the challenges and successes in the nation-building experiences of countries in Africa, South and Southeast Asia, East Asia, Latin America and the Caribbean, and the Middle East.
- demonstrate an understanding of economic systems and decision-making processes as they relate to the development of national economies in Africa, South and Southeast Asia, East Asia, Latin America and the Caribbean, and the Middle East.
- analyze the international relations and foreign policy decision-making processes in Africa, South and Southeast Asia, East Asia, Latin America and the Caribbean, and the Middle East.
- analyze the relationships between events in Africa, South and Southeast Asia, East Asia, Latin America and the Caribbean, and the Middle East.
- demonstrate an understanding of the evolution of democratic principles and the continuing struggle for human rights throughout Africa, South and Southeast Asia, East Asia, Latin America and the Caribbean, and the Middle East.

(Continued on the following page)

- explain how changing technology influences the socioeconomic development of Africa, South and Southeast Asia, East Asia, Latin America and the Caribbean, and the Middle East.
- demonstrate an understanding that groups of people in Africa, South and Southeast Asia, East Asia, Latin America and the Caribbean, and the Middle East view ideas and events from multiple perspectives.
- gain knowledge about the past and present in Africa, South and Southeast Asia, East Asia, Latin America and the Caribbean, and the Middle East by using new technology, textual (e.g., literature, documents, letters), and nontextual (e.g., oral traditions, dance, film) sources.

* An Example Objective and an Example Activity are provided for this Expectation. See page 198.

Grade 10

GLOBAL STUDIES — EASTERN AND WESTERN EUROPE AND THE FORMER SOVIET UNION

Students will

- draw conclusions about how events, ideas, and people in Africa, South and Southeast Asia, East Asia, Latin America and the Caribbean, and the Middle East have influenced events, ideas, and people in Eastern and Western Europe and the former Soviet Union.
- analyze and interpret geography-related data to hypothesize, make predictions, and draw conclusions about the impact of geography on the development of Eastern and Western Europe and the former Soviet Union.
- demonstrate an understanding of the major events that shaped present conditions in the pre-nation-state histories of Eastern and Western Europe and the former Soviet Union.
- examine the significant political, economic, and social changes, from the advent of nationalist movements to the development of modern nation-states in Eastern and Western Europe and the former Soviet Union, .
- examine the challenges and successes in the nation-building experiences of countries in Eastern and Western Europe and the former Soviet Union.
- demonstrate an understanding of economic systems and decision-making processes as they relate to the development of national economies in Eastern and Western Europe and the former Soviet Union.
- analyze the international relations and foreign-policy decision-making processes in Eastern and Western Europe and the former Soviet Union.*
- demonstrate an understanding of the evolution of democratic principles and the continuing struggle for human rights throughout the world, and take personal and collective responsibility for supporting democratic ideals and human rights.
- demonstrate an understanding that groups of people in Eastern and Western Europe and the former Soviet Union view ideas and events from multiple perspectives.
- explain how changing technology influences the socioeconomic development of Eastern and Western Europe and the former Soviet Union.

(Continued on the following page)

- understand the causes and effects of cultural diffusion and political and economic interdependence on Eastern and Western Europe and the former Soviet Union.
- demonstrate the ability to investigate, analyze, and discuss issues of global concern, using knowledge acquired in their two-year study of regions around the world.

• An Example Objective and an Example Activity are provided for this Expectation. See page 199.

Grade 11

UNITED STATES HISTORY AND GOVERNMENT	CONSTITUTIONAL FOUNDATIONS FOR THE UNITED STATES AND UNITED STATES HISTORY SINCE 1865

Students will

- analyze and evaluate, from various cultural group perspectives, major events in American political history from 1865 to the present, using textual and nontextual sources.
- demonstrate an understanding of the origins and development of the United States Constitution as a basis for our government during our nation's early history.
- demonstrate an understanding of the Constitution and its principles as persistent themes in the historical development of the United States and its peoples.
- understand how people from different groups have contributed to the American cultural heritage, and how events in United States political history have impacted people from different groups.
- explain how industrialization and changing technology have affected the political, economic, and social development of the United States.
- analyze the progress of safeguarding civil rights for individuals and groups and the struggle engaged in by different groups of Americans for equal rights and opportunities.
- describe causes and effects of the changing role of government in American political, economic, and social life.
- analyze the important role the United States plays in world affairs and how that role has evolved from isolationism to internationalism.*
- demonstrate an understanding of the structure, function, and operation of the state and national governments.
- value the principles and ideals of a democratic system, based on human dignity, liberty, justice, and equality.
- analyze the impact of global interdependence on the United States today, and predict its future impact.

* An Example Objective and an Example Activity are provided for this Expectation. See page 200.

Grade 12

SOCIAL STUDIES — PARTICIPATION IN GOVERNMENT

Students will

- take personal and collective responsibility for creating an environment supporting democratic ideals.
- analyze the structure, organization, and operation of the local, state, and federal governments.
- access, organize, and present data in order to participate more effectively in school, community, city, state, and national government.
- make informed judgments concerning public policy issues.
- analyze the formulation, implementation, and evaluation of public policy at all levels of government.
- demonstrate an understanding of how to influence a public policy decision on the local, state, national, or international level.*
- apply the skills and knowledge learned and developed in other social studies courses to participate as informed citizens in a democratic society.
- devise strategies to participate in decision-making in their schools, community, and nation.
- demonstrate an understanding of how public policy decisions are made.
- apply problem-solving processes to formulate possible solutions to local, state, national, and global problems.
- demonstrate an awareness of public policy formulation, analysis, and implementation, utilizing internships and "shadowing" experiences (direct and continual observation) with those who make and influence policy at all levels of government.

* An Example Objective and an Example Activity are provided for this Expectation. See page 201.

NJIT
New Jersey Institute of Technology

CENTER FOR ARCHITECTURE AND BUILDING SCIENCE RESEARCH

A Public
Research University

NJIT Center for Architecture and Building Science Research
High School for Arts and Business
National Center for Preservation Technology and Training

Presents

Historic Preservation Workshop at the Queens Museum of Art

Theme: Worlds Fairs

October 2, 1999 - 9:00 A.M. - 3:00 P.M.

9:00 A.M.	Light Refreshments
9:15 A.M.	**Introductions:** Kate Burns Ottavino, Director Preservation Technology, NJIT Center, Moderator **Welcome**: Council member Ken Fisher; Council member John Sabini, and High School for Arts & Business Principal Stephen Drakes **Keynote Speaker**: Alex Herrera, Director of Technical Services, NY Landmarks Conservancy: Historic Preservation Overview **Worlds Fair Presentation**: Curator Sharon Vatsky, Queens Museum
10:00 - 11:15 A.M.	HSAB Teachers present preservation enriched lessons to HSAB students grades 9 through12 (English, Lynda Aron; History: David Moyal; Art, Bryan Serra; Science, Kieran McGuire) Concurrent Workshops - 30 minutes each
11:15 A.M. - 12:45	Students break for lunch and to visit the Worlds Fair Grounds Flushing Meadows to do rubbings on the granite relief by artist Matt Mullican's representation of Worlds Fairs (in front of Unisphere), or to visit the Worlds Fair Exhibit at the Queens Museum
12:45-2:00 P.M.	HSAB Teachers present preservation enriched lessons to HSAB students grades 9 through12 (concurrent lessons one half hour each)
2:00 - 2:30 P.M.	Students break into two groups and either visit the Worlds Fair Exhibit at Queens Museum or do rubbings at the World Fair granite relief by artist Matt Mullican, that is in front of the Unisphere.
2:40 P.M.	Wrap up. Presentation by Felipe Giraldo, HSAB student and 1998 Intern. Students receive follow up assignment
3:00 P.M.	End of day's activities

UNIVERSITY HEIGHTS
NEWARK, NJ 07102-1982
973.596.3097
973.596.8443 FAX

Schedule for Lessons and Tours - October 2, 1999

Workshop Time slots - 10:00 and 12:45:
Workshops I through IV

	Workshops 10:00 - 10:30	Workshops 10:40-11:10	Room*
English	I	II	
History	II	III	
Art	III	IV	
Science	IV	I	

	12:45 - 1:15	1:25 - 1:55	Room
English	III	IV	
History	IV	I	
Art	I	II	
Science	II	III	

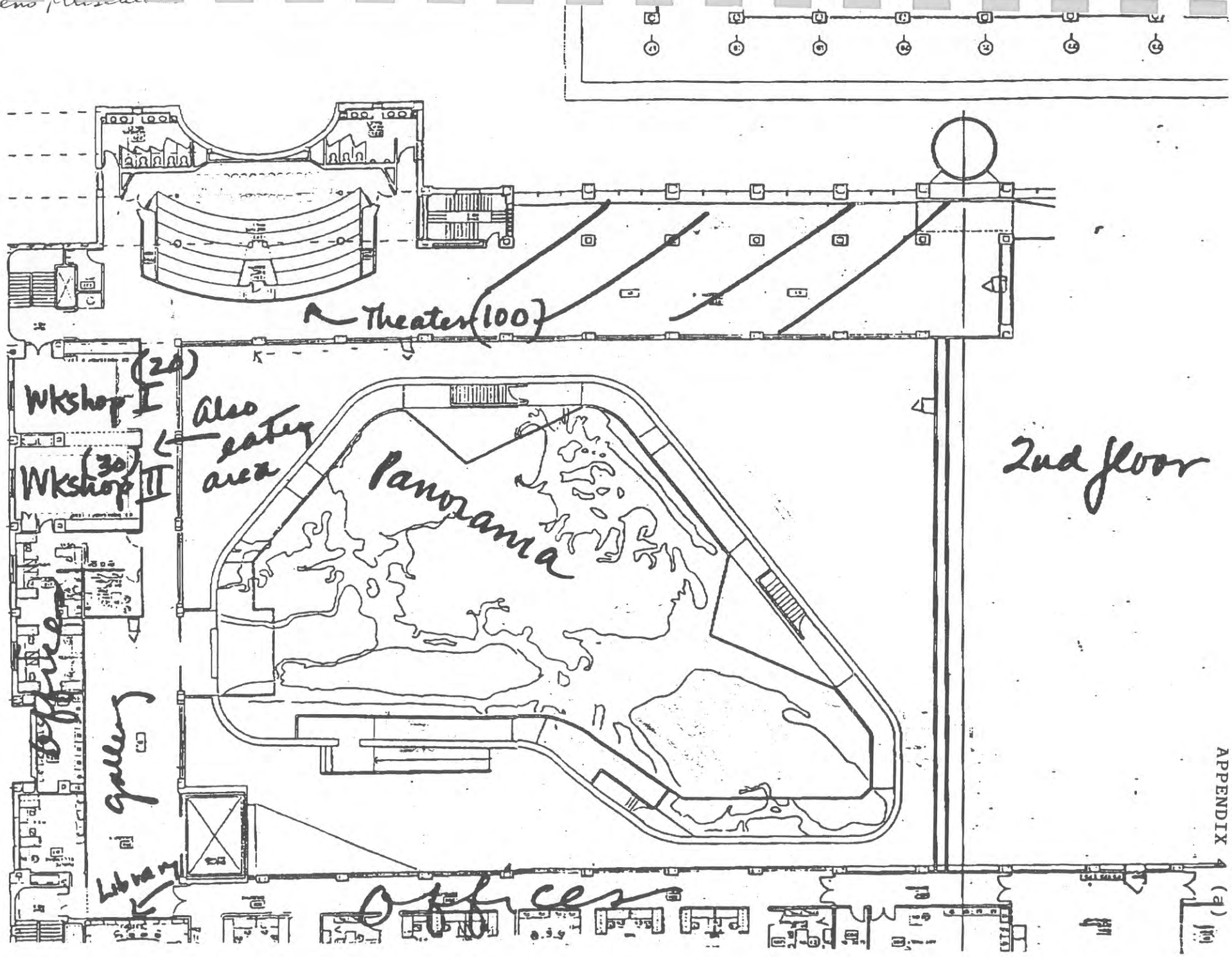
The tours as follows:

11:15 a.m.	Group A (Workshops I & II) Group B (Work Shops III & IV)	Lunch Granite Relief Rubbings
Noon	Group A Group B	Visit Worlds Fair Exhibit Lunch

[Regroup for classes at 12:45] then
Tours in afternoon:

2:00 p.m.	Group A Group B	Granite Relief Rubbings Visit Worlds Fair Exhibit

Fresno Museum



APPENDIX 4 (a)

Historic Preservation Workshop Student Attendees
October 2, 1999

Workshop I

1. Farhana Ahmed
2. John Balbarin
3. Robert Camacho
4. Michael Choi
5. Sabrina DeLaConcha
6. Roy Harrison
7. Robert Moncayo
8. Esther Rosemary Ortiz
9. Grendy Perez
10. Laura Perez
11. Makeda Savice
12. John J. Valdez

Workshop II

1. Zivia Ackerman
2. Shawnette Bennett
3. Nadege Cheron
4. Kristen Desappio
5. Nelson Diamond
6. Karen Fernandez
7. Angela Galan
8. Felipe Giraldo
9. Michael McNamee
10. Tatiana Montoya
11. Angela Ortiz
12. Jennifer Rodriguez
13. Luis Romero

Historic Preservation Workshop Student Attendees Continued 2

Workshop III

1. Daniel Back
2. Aneta Baldyga
3. John J. Cannetti
4. Dave B. Cuvi
5. Zandra Cuzo
6. Alan Elias
7. Elmarisa Liz
8. Jose Liz
9. Jeny Lopez
10. Kathy Martinovich
11. Isabel Mendoza
12. John Mendoza
13. Amanda Ramnarian
14. Stephanie Romano
15. Pamela Sajnani

Workshop IV
Student Attendees

1. Ingrid Diaz
2. Yvette Fernandez
3. Jennifer Forlong
4. Jose Luis Galan
5. Vanessa Hernandez
6. Jessica Jones
7. Yadinet Pena
8. Maria Pluchinotta
9. Vicky Rivadeneira
10. Josiah Romulo
11. Kirsy Duverge
12. Korina Duverge
13. Johnathan Valencia
14. Maurece Wimberly

CERTIFICATE of PARTICIPATION

PRESERVATION WEEK MAY 6th and 7th, 1998
HIGH SCHOOL for ARTS and BUSINESS
CORONA, NEW YORK

presented to

Leidy Rivera

by
NJIT Center for Architecture and Building Science Research &
The National Center for Preservation Technology and Training

Kate Burns Ottavino, Director of Preservation Technology
New Jersey Institute of Technology CABSR

Stephen Drakes, Principal
High School for Arts and Business

APPENDIX 4(b)

APPENDIX 4 (c)

History of the Museum

The Queens Museum of Art was established in 1972 by a group of Queens community leaders to provide a vital cultural center in Flushing Meadows Corona Park for the borough's unique, international population. The Museum is situated in the New York City Building, the only major structure remaining from the 1939/40 and the 1964/65 New York World's Fairs.

In 1994, a three-year, $15 million renovation project designed by architect Rafael Viñoly expanded the gallery spaces to allow the Museum to present exhibitions with broad cultural and historical significance as well as ambitious installations of contemporary art. After 25 years, the Museum serves over 200,000 visitors a year through on- and off-site programs.

made at the Tiffany Studios, located in Corona, Queens, from 1893 to 1938. Rare industrial artifacts from the studios are also displayed.

Panorama of the City of New York

The gallery spaces surround a freestanding enclosure at the heart of the Museum which contains a permanent attraction from the 1964/65 New York World's Fair, the Panorama of the City of New York. The Panorama, at 9,335 square feet the world's largest architectural scale model, encompasses every structure in New York City. Built by Lester Associates for former Parks Commissioner and World's Fair President Robert Moses, the Panorama projects an incomparable bird's-eye-view of the entire metropolis.

A Panoramic View:
The History of the New York City Building and Its Site

This permanent exhibition tells the story--with memorabilia, models, videos and CD-ROMs -- of the building's involvement in the 1939 and 1964 World's Fairs and as temporary home to the United Nations General Assembly between 1946 and 1952.

Permanent Collection

The Museum's permanent collection focuses on 20th-century art and includes works by Joseph Cornell, Reginald Marsh and others, as well as recent acquisitions by Dennis Adams, Luis Camnitzer, Nassos Daphnis and Grace Hartigan.

Casts Gallery

The Casts Gallery highlights plaster casts of Classical and Renaissance sculpture on long-term loan from the Metropolitan Museum of Art.

Past Exhibitions

Life Cycles

The Charles E. Burchfield Collection,
January 27-March 21, 1999.

Before the Lens

Images of the Imagemakers,

Grade 9 Lesson Plan
Preservation Arts
David Moyal

Aim: How do objects reflect a civilization in a certain period of time?

SWBAT: -observe the importance of objects as a way of remembering the past.
-determine what objects define their society in their own lives

Motivation: Have students brainstorm on objects that have defined these past civilizations:
1.Prehistoric Man 2.The Ancient Egyptians 3.The Ancient Chinese
4.The Medievel Europeans 5.The Greeks and Romans 6.The Native Americans

*put answers on semanticmap transparency of each civilization)

Key Questions for brainstorming activity:
1.How do we get information about these past civilizations? Through the objects that have survived.

2.How were these objects preserved throughout the years?
****Show appropriate transparencies as students give responses**

possible answers:
-sometimes by accident: cavemen, Native Americans (arrowheads, tools, burial grounds)
-sometimes on purpose: Egyptians, Chinese (pyramids, huge underground tombs)
-sometimes by organized efforts (Arabs saved Greek and Roman art and literature)

II: Explain the purpose of the Time Capsules in both the 1939 & 1964 World's Fairs
1.Show transparency that outlines the contents of each
2.Have the students theorize on why those contents were included
3.Have students come up with a millenium time capsule and discuss why each object should be included.

Summary: What objects best represent our society in 1999?

Grade 11 Lesson Plan
Preservation Arts
David Moyal

Aim: Why has the need for a World's Fair become a thing of the past?

SWBAT: -understand the nature of the World's Fairs as a place to showcase technology
-identify the role of computer technology in different fields of business
-decide how important it is for schools to prepare students to use the technology in those fields

Motivation: Introduce topic by explaining the general purpose of the World's Fairs as a place to show people of different nations new technology, products, and trends for the not so distant future. **1939:**

1964:

2.Explain that technology is changing so fast, that by the time they set up a site, new technology would already be out. Also with new forms of communication and transportation the world is a lot smaller than it used to be.

Question: Based on that knowledge, Who do you think should be responsible for teaching us about the technology that we will need to survive in the future world?

Activity Description:
1.Divide the class into 5 groups
2.Explain that they will be taking part in a round table discussion of the role of schools in providing students with the technological skills they will need in the working world.

Focus: Lead students to see that in the future, the computer and other high-tech equipment will be an integral part of most businesses.

Activity: Assign each group one field of employment or business, such as the following:
-insurance company
-auto repair shop
-magazine publisher
-post office
-department store

****Explain each group as owners and managers of its business have been asked to take part in a round table discussion on career day at a High School. One member of each group will participate. Discussion will focus on the following questions:**

1.What is the role of computer technology in your business?
2.How important is it for schools to prepare students who enter your field?

Assess: Conduct the discussion.
-Each member should be prepared to make thoughtful contributions and to answer the 2 questions fully.
-Encourage the rest to ask relevant questions to keep the discussion going.

Grade 12 Lesson plans
Preservation Arts
David Moyal

Aim: How do we decide whether a landmark should be preserved?

SWBAT:-develop a list of criteria for saving national landmarks
-understand the processes involved in saving monuments
-identify the agencies that deal with saving landmarks

Motivation: I: Have the students generate a list of criteria that should be used when determining what landmarks should be preserved:

Possible answers: (put on transparency as they come)
-historic value -Architectural Design -aesthetic value -tourist value -materials used

II: Based on this criteria, which of the following NYC landmarks do you think are important to preserve?
1.Empire State Building 2.World Trade Center 3.Statue of liberty 4.Brooklyn Bridge 5.Arch in Washington Square Park 6.Chrysler Building 7.The United Nations 8.Yankee Stadium 9.Shea Stadium 10.St. Patrick's Cathedral 11.Central Park 12.Ellis Island 13.Coney Island Ferris Wheel or The Cyclone

III: Now where do we turn to make this happen?

a. should the government bear the burden with taxpayers money, should it be the responsibilities of private companies or philanthropists?
b. explain the role of the Landmarks Preservation commision-NYC's agency that is responsible for identifying and designating the city's individual landmarks. Also regulates changes to designated buildings.
c. Explain how the commision has 170 days to vote, mayor has 5 days to veto, city council could override in 10 days.

Activity: Write a persuasive business letter to the Landmarks Commission requesting the preservation or maintenance of the World's Fair landmark in Flushing Meadows Park in Queens. Explain why you have chosen this landmark.

World's Fair Lesson Outline
English: Lynda Aron

PRESERVE THE PAST...MAINTAIN THE PRESENT...ENSURE THE FUTURE

9th grade
The use of symbols in literature
Literary vs. Physical Symbols
Geometrics: Visual vs. Descriptive
Aesthetics
Symbolic Trinkets

WRITING ASSIGNMENT: Describe the significance of symbols in literature, religion and society. Choose one area to focus on and explore how a teenager might identify, react or rebel in a particular situation. You may create an imaginative situation, an historical context or choose an event from current events. Your paper should follow standard format and be 250-500 words.

10th grade
Symbols Triggering Emotions

Writing Assignment: Based on Flaubert's comment that "everyone's life is worth a novel create a scenario using a setting from a monument, historic structure or well known symbol that has affected your story. I prefer that you use a real life situation but you may create something fictitious.

11th grade
Benchmark Events

Writing Assignment: Think of a benchmark event that has affected who you are at this point in your development.

12th grade
People, Places and Events: The creation of a life formed by emotional connections
Values and Memories
Existential Alienation and Connection
Discuss how the lost generations felt after WWI, WWII and the Viet Nam War.
Elicit responses concerned with feelings of absurdity, alienation and loss of meaning.
Ask students how meaning is reestablished.
Describe nostalgia, new technology and how the polarity can establish a center of awareness and connection.

Writing Assignment:
Explore how the pace of life at the end of the millenium creates an atmosphere of "meaningless". Point out the irony of where the World's Fair, portal to the future is located in view of the traffic and metropolitan situation.

Workshop Material

Students will read enclosed newspaper articles before workshops.
Questions pertaining to articles and their significance will be focused on in the context of subjects addressed.

Many Faiths Display Their Art, Symbols

By ANNA OLSEN
Of the World-Telegram Staff

Michelangelo's Pieta, in the Vatican Pavilion, has understandably held the art spotlight at the World's Fair religious exhibits. But other faiths also imported or created sculpture, dress, murals and architectural symbols for the Fair exhibits.

The Russian Orthodox Church is displaying a Byzantine icon—incrusted with gems valued at half a million dollars, including six emeralds from King Solomon's mines. This holy icon of the Virgin of Kazan is housed in a replica of the first Russian Orthodox Church in the United States.

The charred cross from Coventry Cathedral has been imported from England for the Music Garden at the Protestant-Orthodox Center.

The cross was made of charred oak beams that fell from the bombed and burning roof of the old cathedral in 1941. A contemporary symbol of reconciliation, it is displayed in the Fair as it was in Coventry with the words "Father Forgive" in the background.

* * *

The gilded nine-foot statue of the angel Moroni atop the highest spire of the Mormon Pavilion is a Fair landmark. Inside are two large murals. One depicts scenes from the life of Christ and the other tells the story of the development of the Church of Christ of the Latter Day Saints (Mormon).

A vivid 100-foot mural, "From Savage to Citizen," is featured in a building sponsored by the Wycliffe Bible Translators, a Protestant mission group whose work centers on translation and publication of the Bible for remote tribes.

The name of the pavilion, "2000 Tribes," refers to the tribes who do not yet have any portion of the Bible in their own language. The building resembles a jungle hut and has three colorful totem poles at the entrance.

* * *

The designers of the Christian Science Pavilion point out that the art in their exhibit is an illustrative contemporary setting for the "text" of the exhibit—written especially for the Fair or quoted from the Bible or or "Science and Health," the Christian Science textbook.

A special feature in this star-shaped building is recorded news dispatches from Christian Science Monitor correspondents around the world, available at the flick of a dial.

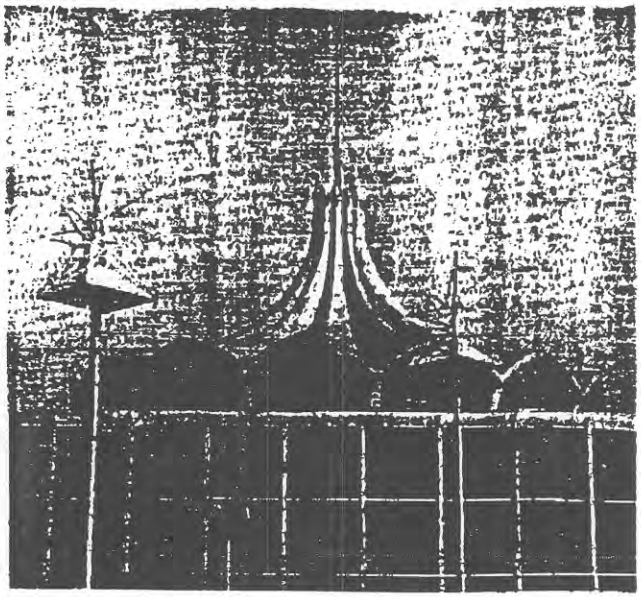
Motion pictures have an important role in the religious pavilions. An allegorical film, "Parable," can be seen in the Protestant-Orthodox theater.

* * *

The Billy Graham Pavilion shows "Man in the Fifth Dimension," narrated by the evangelist. In Todd-AO wide screen it is almost ever-powering in the intimate theater. The film will be run every hour on the hour.

In the Sermons from Science Pavilion, films are presented with live demonstrations. Demonstrator George Speake will show a million volts of man-made lightning, metal rings floating through the air and invisible energy setting steel aflame, among other feats.

The goal of Sermons from Science is to translate the wonders of science in terms of spiritual reality.



Vatican pavilion in which Pieta is housed.

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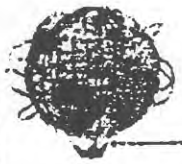

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Junior To Be Educated—and Like It

By JUDSON HAND
Of the World-Telegram Staff

Indications are you'll have to drag your youngster away from the educational exhibits at the World's Fair.

Browsing among the Fair's 180 pavilions, he will be confronted by one fascinating spectacle after another—spectacles which, often, will take up where his textbooks left off. These range from life-size models of prehistoric monsters to demonstrations of the latest developments in space technology.

The Hall of Science, to cite one example, is calculated to draw youngsters like a magnet. Here they are shown just how scientific techniques they learned about in school can be used in real life.

* * *

Small fry are especially apt to linger in the hall's "Atomsville, U.S.A." the exhibit of the Atomic Energy Commission. In this display, children are the actors, handling imitation radioactive materials with mechanical hands, using Geiger counters and creating patterns of atoms.

Nearby, other exhibits will involve highly sophisticated uses of electronics, such as safe landing systems, the physics of light and research on the bottom of the ocean. But don't worry—junior will probably understand more of this than you think.

The Science Hall exhibit is climaxed by a sure-fire crowd pleaser—the "Rendezvous in Space"—which uses two real space vehicles.

A World Tour

If your youngster leans towards the humanities or the social sciences, there will be plenty to interest him, too.

For example, he can take a "tour" of the world, covering more than 45 nations, simply by strolling through the International Area of the fair.

Along the way, he can brush up on his high-school foreign language by conversing with natives stationed at pavilions of foreign nations.

Other exhibits bring dry facts of history to life.

One includes a full-size replica of Christopher Columbus' flagship, the Santa Maria, built in Spain with 15th century-type tools.

To get the overall picture, youngsters can take a Cinerama journey through 350 years of American history.

The Hall of Education promises to be a favorite with youngsters. In this 80,000-square-foot structure, the entire history of schooling in the United States is told.

* * *

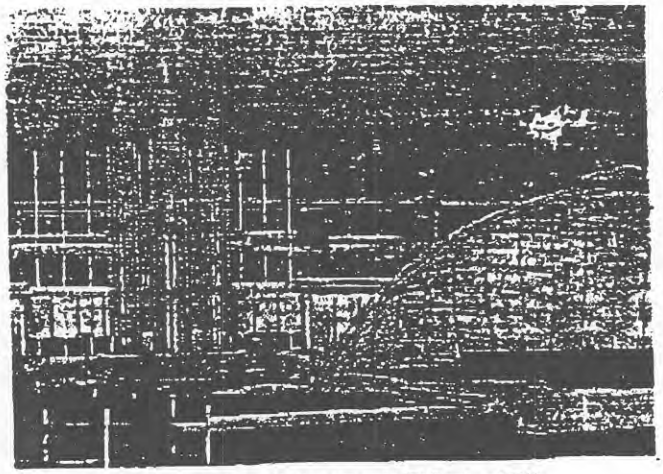
Particularly eye-catching is the school of the future, showing new scientific equipment—such as advanced teaching machines and a variety of audio-visual equipment—designed to ease the lot of both teachers and pupils of the future.

If your youngsters finds some of these devices a trifle bewildering—as well he might—he can consult an automatic answering service that will answer his questions.

For the older teen-agers, there are Dialogues in Depth—a series of informal talks by well-known intellectuals and personalities preserved on film and tape.

There's a library of the future, too, containing an electronic arsenal of information which can be stored or disgorged at the press of a button. Documents in the library can be transmitted and reproduced via closed-circuit TV.

Whatever the youngsters' tastes, whether they favor free sewing lessons or classical Chinese drama, they will find endless enjoyment—and instruction—at the Fair.



Mormon Tabernacle towers over DuPont exhibit.

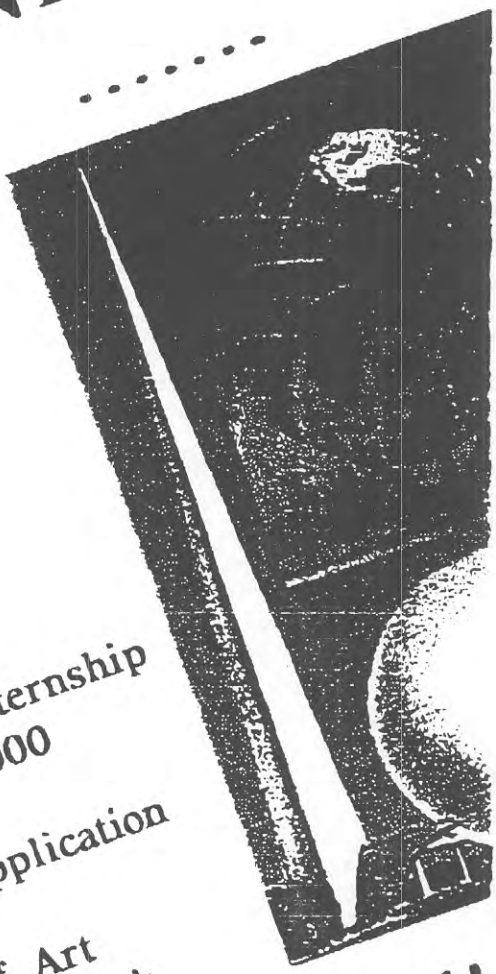
Sample of articles

Reserve your space NOW!

PRESERVE THE PAST
MAINTAIN THE PRESENT
ENSURE THE FUTURE

.....

by attending a Video Presentation
Thursday, September 16, 1999
2:20 p.m. Student Cafeteria



When:
Saturday, October 2, 1999

Why:
-Fun
-History
-Culture
-Opportunity for a paid internship during the Summer of 2000
-Resume building
-Enhance your college application

Where:
The Queens Museum of Art
Flushing Meadow Corona Park

The World's Fair is in our Backyard!
Our Own World's Fair Day

Contact Ms. Aron, Mr Serra or Mr Moyal for further info.

The task of the designer
is to conceive, plan, and construct
artifacts that are appropriate
to human situations,
drawing knowledge and ideas
from all of the arts and sciences.

Historic Preservation Workshop
Queens Museum of Art
October 2, 1999

High School for Arts and Business
Bryan F. Serra
Grade 9

LESSON PLAN **ONE** (abbreviated)

SUBJECT: FINE ARTS, Secondary Education

ACTIVITY: **Texture Rubbings**

OBJECTIVE: The students comprehend structure by demonstrating assembly of textured rubbing from their immediate interior space.

MOTIVATION: Creation of art using basic available resources and materials.

VOCABULARY: Texture, pattern, transference, reproduction, & complimentary colors

MATERIALS: Wax crayons, tissue paper, newsprint
Colored stock for mounting, glue stick, scissors, and rulers

PROCEDURE:
1 - Distribute workshop handout 'A'
2 - Monitors distribute paper and crayons
(Dark complimentary colors are stronger visually)
3 - Art educator demonstrates rubbing technique in one color, then rotates 90° for opposite color rubbing..
4 - Cut basic geometric shapes and paste up, balancing textures as in handout.
5 - Discuss granite relief, by artist Matt Mullican, near the Unisphere.

SCHEDULE: One half hour session.

EVALUATION: Historic reference of 1939-40 World's Fair materials and structure. Reference Robert Moses, Howard Hughes, Norman Bel Geddes, Raymond Loewy, Henry Dreyfuss and Walter Durwin Teague. 1964 World's Fair with plastic and POP-Art influence. Supplement lessons with slide presentation of future designs, New England gravestone rubbings and patterns created in architectural interior and exterior surfaces.

The Visual Elements of ART

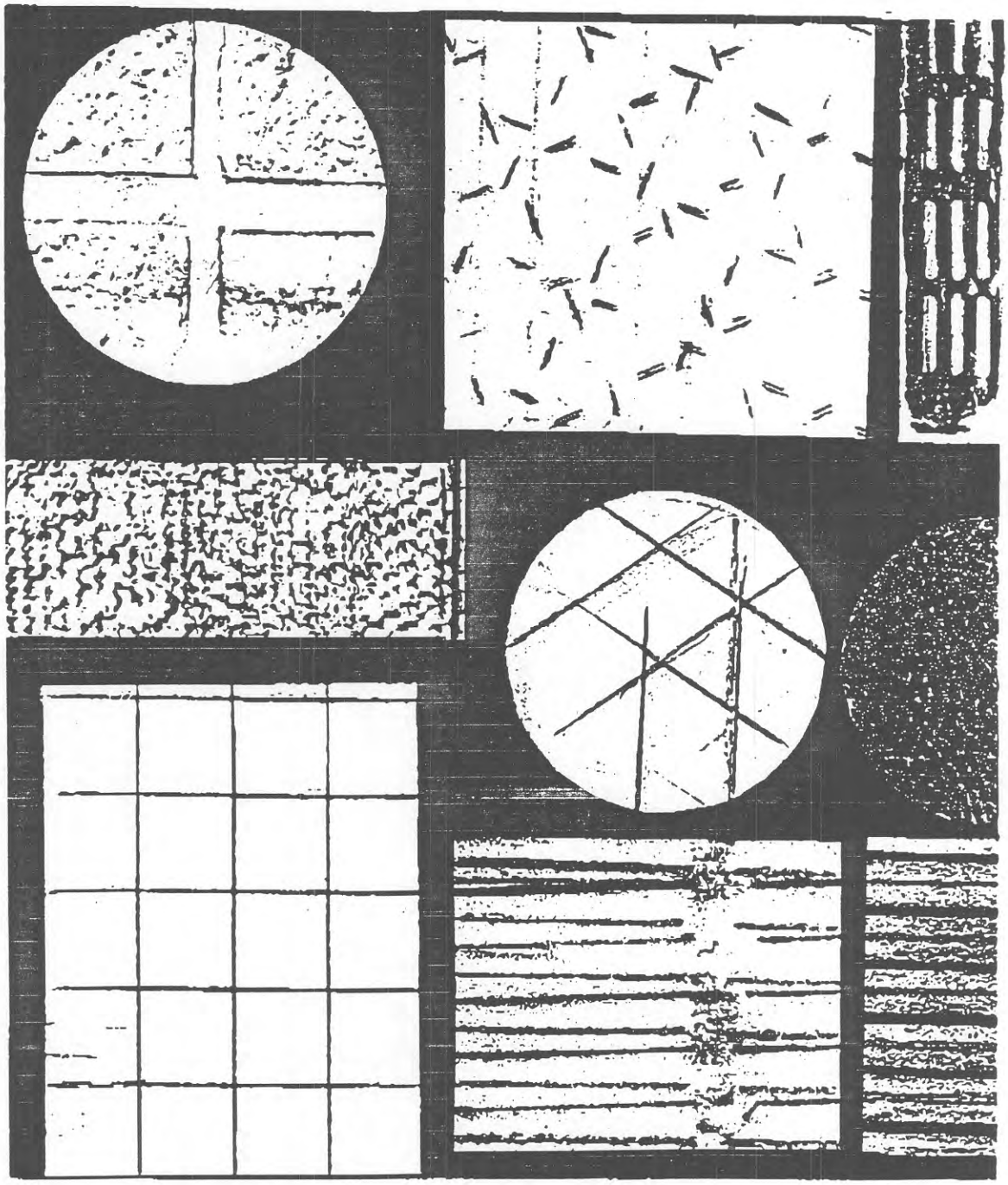
LINE	FORM	SPACE	COLOR	TEXTURE	PATTERN

INTRODUCTION TO ART - CLASSWORK/HOMEWORK 1995-1996

NAME: _____ DATE: _____

CLASS: _____ PERIOD: _____

These TEXTURES were created in class. Create your own TEXTURE RUBBINGS in class and at home.



Historic Preservation Workshop
Queens Museum of Art
October 2, 1999

High School for Arts and Business
Bryan F. Serra
Grade 10

LESSON PLAN **TWO** (abbreviated)

SUBJECT: Fine Arts, Secondary Education

ACTIVITY: **Basic Drawing Technique**

OBJECTIVE: Students will be able to demonstrate grid and perspective as "tricks" to realistic freehand architectural drawing.

MOTIVATION: Creating art based upon realistic (accurate representation) and abstract (non-objective) direction. This preliminary class functions as a pre-requisite to World's Fair adaptation.

VOCABULARY: Perspective, grid fragmentation, proportion, composition, sketch technique, line weight, harmony, and transference

MATERIALS: Pencils, erasers, markers, rulers and drawing paper 12" X 18"

PROCEDURE:
1 - Explain and demonstrate "grid tricks" upon viewing workshop handout 'B'.
2 - Sketch 2-point perspective building
3 - Create a structure using square, triangle, and rectangle associations

SCHEDULE: One half hour session

EVALUATION Extended lesson includes integration of LESSON ONE rubbings as a collage, mixed media, with architectural drawings.:

The Visual Elements of ART

B

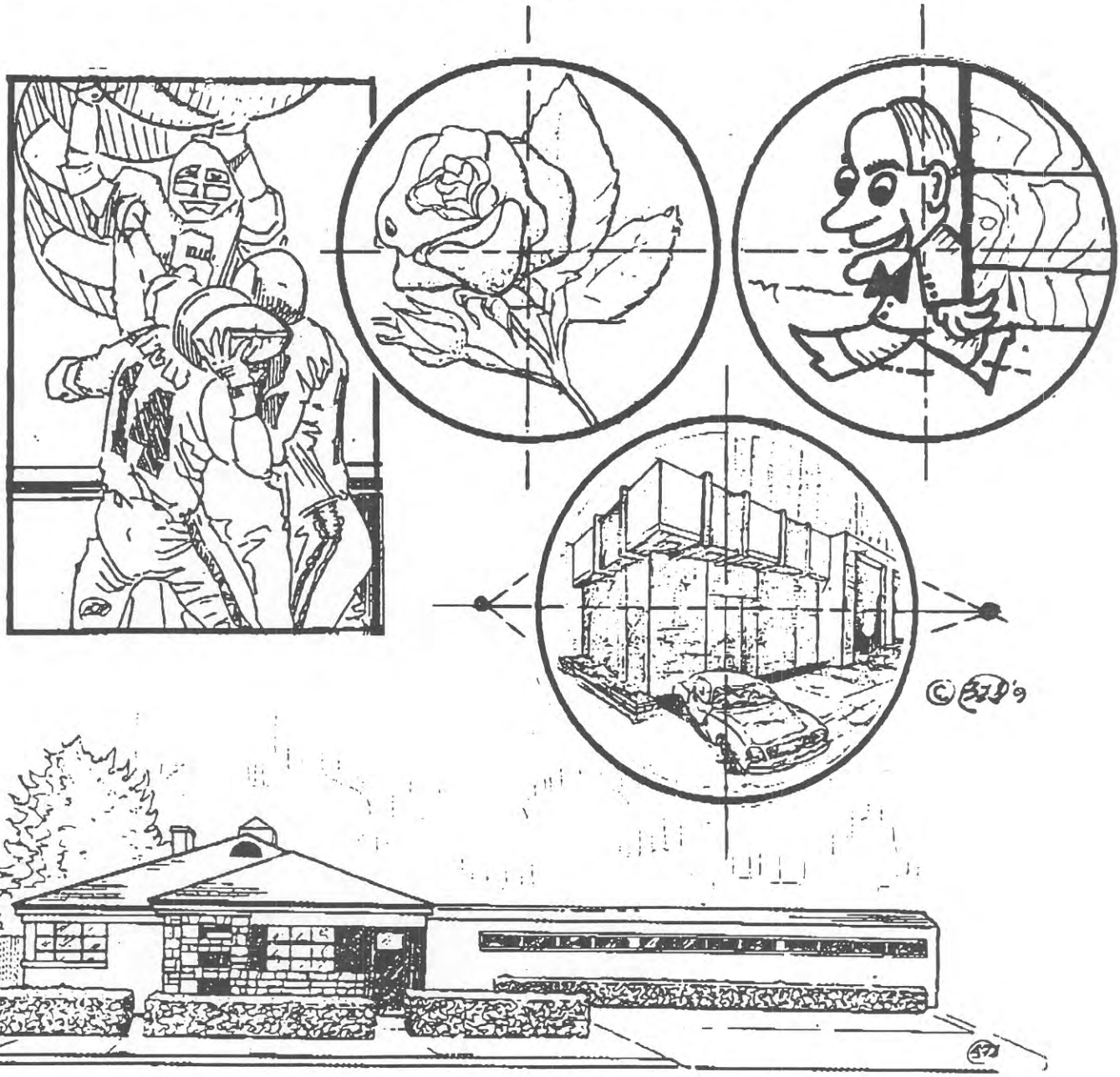
LINE	FORM	SPACE	COLOR	TEXTURE	PATTERN

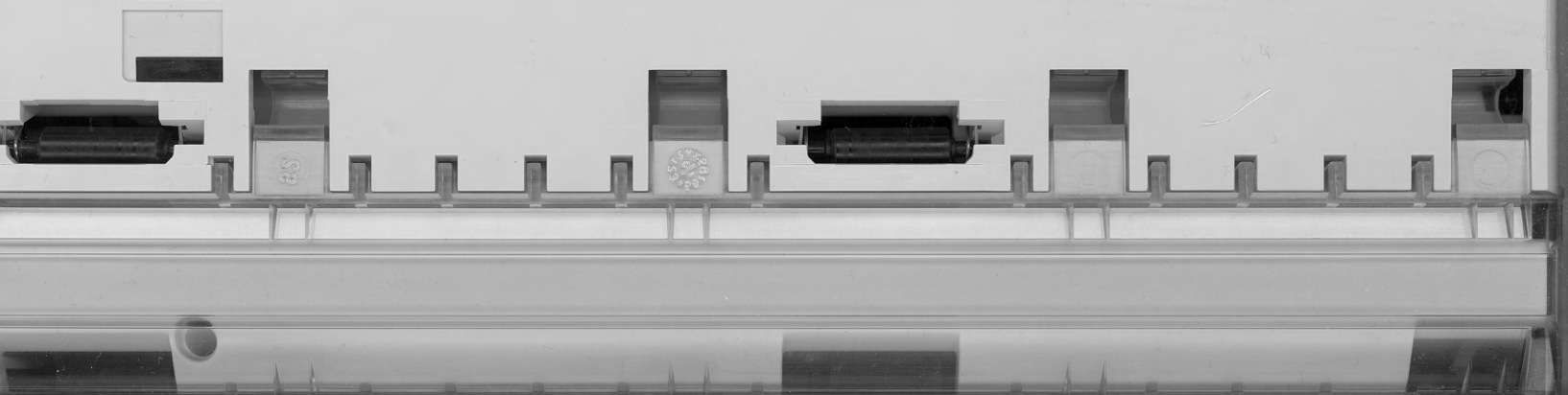
INTRODUCTION TO ART - CLASSWORK/HOMEWORK

NAME: _____ DATE: _____

CLASS: _____ PERIOD: _____

The following are examples of line drawing.





Historic Preservation Workshop
Queens Museum of Art
October 2, 1999

High School for Arts and Business
Bryan F. Serra
Grade 11

LESSON PLAN **THREE** (abbreviated)

SUBJECT: Art and Design, Secondary Education

ACTIVITY: **Sketching World's Fair Architecture**

OBJECTIVE: Sequences in texture and basic drawing technique will prepare the student for the challenge of drawing the World's Fair site architecture or artifacts displayed in the Queens Museum.

MOTIVATION: The application of new discovery in drawing technique, to the "site" Neighborhood Park architecture.

VOCABULARY: Rendering, representation, cross-hatch, blending, contrast, dynamic vs static composition & transference, pure form

MATERIALS: Pencil, erasers, markers, rulers, paperstock

PROCEDURE:

1 - Distribute workshop 'C' drawings of student site work in freehand of 1964 structures.
2 - Identify basic form, apply grid transfer technique from sequential LESSON TWO.
3 - Sketch, practicing elipses and pure form in pencil. Combine with thin marker cross-hatching or textures.

SCHEDULE: One half hour session.

EVALUATION: Have we improved our skill in drawing since this morning? Are we ready to be inventive in developing new World's Fair creations? Discuss briefly the role of 1939 industrial designers and architects. Discuss the role of 1964 POP-Art influence and advertising persuasiveness.

The Visual Elements of ART

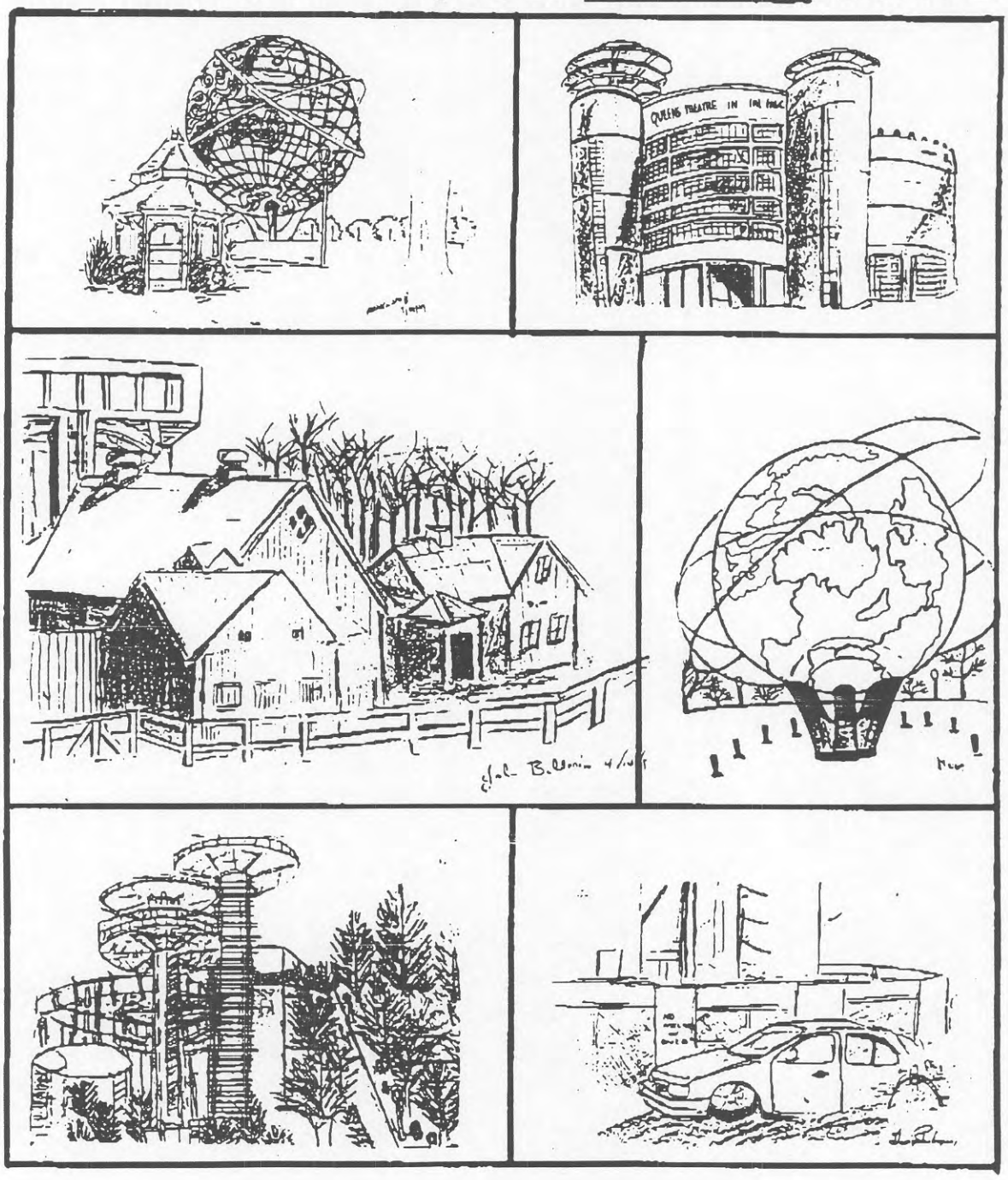
LINE	FORM	SPACE	COLOR	TEXTURE	PATTERN

INTRODUCTION TO ART - CLASSWORK/HOMEWORK

NAME: DATE:

CLASS: PERIOD:

The following are examples of line drawing. ©KSLA+B'99



Historic Preservation Workshop
Queens Museum of Art
October 2, 1999

High School for Arts and Business
Bryan F. Serra
Grade 12

LESSON PLAN **FOUR** (abbreviated)

SUBJECT: Art and Design, Secondary Education

ACTIVITY: **Competency in Architectural Freehand Drawing**

OBJECTIVE: Redesign of the "2000" New York World's Fair utilizing classic elements of architecture and contemporary geometric pure form.

MOTIVATION: Esteem and self-confidence attained applying rote skill and creative methodology.

VOCABULARY: Arches, columns, order, vaults, windows, geometrucs, organic form and symbolic representation.

MATERIALS: Pencils, erasers, markers, rulers, paperstock

PROCEDURE:

1 - Distribute worksheet 'D' (classic elements)
2 - Monitors distribute materials for drawing.
3 - Art educator will briefly discuss the ties of classic decorative elements with pure form for our "virtual 2000" World's Fair.
4 - Choose one structure from the day's workshop - 1939 or 1964, and recreate it by restoring and upscaling its form.

SCHEDULE: One half hour session

EVALUATION: Have a final hanging for art critique and aesthetics. Discuss briefly the requirement in science, english and social studies for a preservation arts career. Assign or discuss projects for summer internship competition.

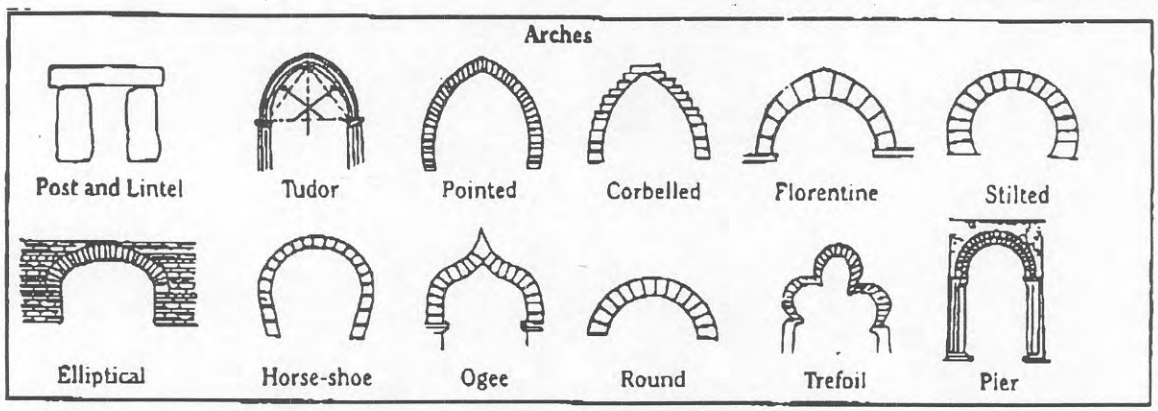
The Visual Elements of ART

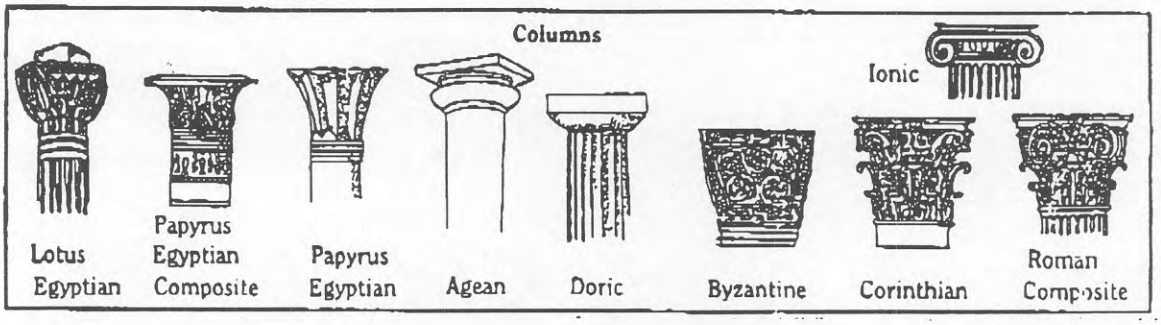
D GROUP 2

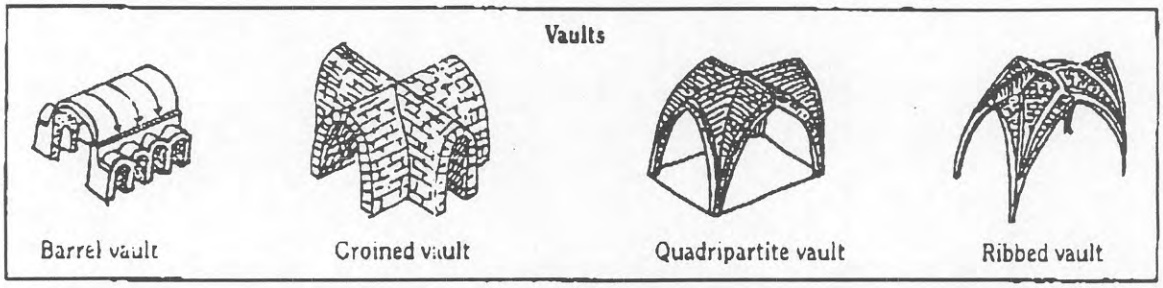
LINE	FORM	SPACE	COLOR	TEXTURE	PATTERN

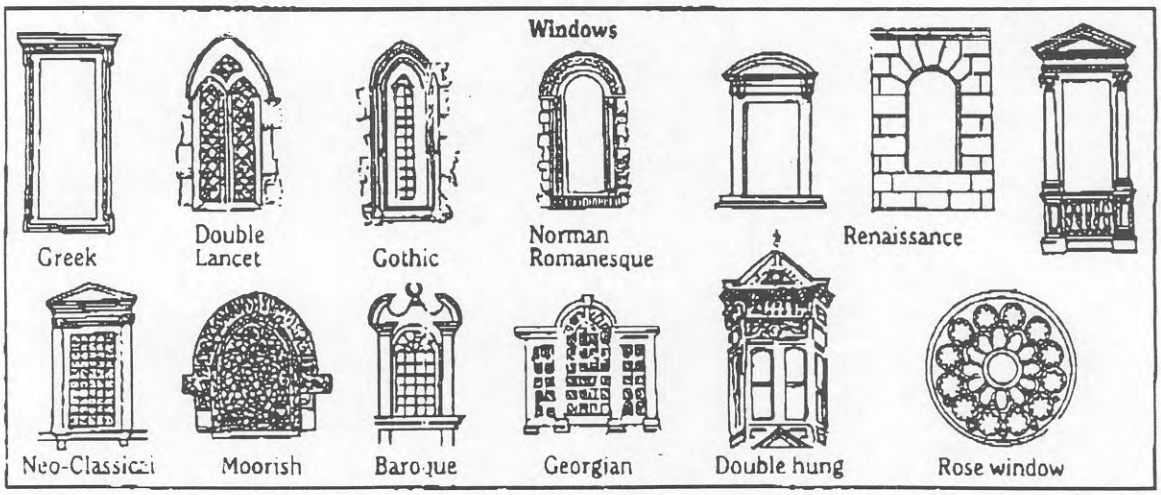
INTRODUCTION TO ART - **Architectural Elements**

NAME: DATE:









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Proposed High School for the Preservation Arts —Model Lesson Plans— Physical Science (Grade 9)

Aim: What Are Physical Changes? What Are Chemical Changes?

Motivation: In order to preserve, we must first know the process of change.

Content: Physical properties of substances are those that can be observed without the production of new substances. Examples are color, taste, hardness, density, melting and boiling points, and electrical conductivity.

The chemical properties of substances are those that describe how a substance interacts (or doesn't interact) with other substances to form new substances.

Physical change occurs when one or more of a substance's physical properties are changed without any change in the substance's chemical properties or composition. Phase changes and shape changes are examples, as is the metamorphosis of limestone into marble.

Chemical change occurs when one or more new substances, that differ in chemical properties or composition from the original substances, are produced. Examples are the formation of calcium sulfide from marble and acid rain, or the formation of any type of rust.

Pieta

Pietà, created by Michelangelo in his early twenties, depicts Mary as a young woman holding the dead Christ in her arms. It is a remarkable technical piece; the flesh under Christ's shoulder just above Mary's right hand seems to be soft and pliable. It is also a work of great beauty, capable of eliciting a deeply emotional response in the viewer.

Application: It is composed of white Italian marble: physically durable, yet chemically susceptible in low pH environments. Its creation was a physical change, as was its slight marring by an attacker in the 1980's.

Assessment: Elicit examples of physical and chemical changes from students. Ask them to explain, as much as possible, each one.

Summary: Change can be physical or chemical; hence the need to study both Chemistry and Physics.

Kieran J. McGuire, formerly of the High School for Art and Business, Corona, New York October, 1999

Proposed High School for the Preservation Arts: World's Fair Thematic Lesson Plans

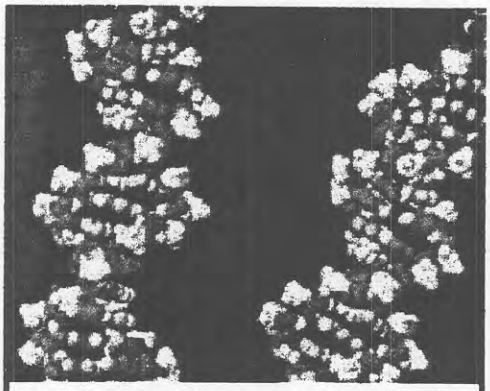
Biology (Grade 10)

Aim: What is unique about each human? What is DNA? What is a genetic fingerprint? Is there a uniqueness beyond genetics that can be observed?

Motivation: What is so important about an original work of art? Is the uniqueness of each work of art a reflection of the uniqueness of each human person? Does this impact the decision to restore or preserve works of art or architecture?

Content: Each human being has a genetic code which is present on 46 chromosomes, half of which came from each parent. The chromosome consist of double-helixes of the nucleic acids Adenine, Cytosine, Guanine and Thymine, the order of which determines the particular genetic code of that individual.

Pieta
Pietà, created by Michelangelo in his early twenties, depicts Mary as a young woman holding the dead Christ in her arms. It is a remarkable technical piece; the flesh under Christ's shoulder just above Mary's right hand seems to be soft and pliable. It is also a work of great beauty, capable of eliciting a deeply emotional response in the viewer.



DNA Strands Nucleic acids are complex molecules. These acids pass on specific characteristics by providing hereditary information and triggering the production of proteins within the body. This computer-generated model shows 2 strands of deoxyribonucleic acid (DNA)

Gregor Mendel , a monk who tended his garden carefully and observed nature, discerend several principles of genetics: that traits could be passed on separately from other traits and that some manifestations of traits were dominant over others. Recessive genes were seen to be hidden sometimes for many generations.

Application: Why was the *Pieta* brought to the World's Fair, instead of merely having a copy made?
Assessment: Do identical twins have the same genetic code? What makes them each unique?
Summary: Does the uniqueness of an individual piece ofart reflect the uniqueness of a human being? Can that uniquness be observed in nature?

Kieran J. McGuire, formerly of the High School of Art and Business, Corona, New York October, 1999

Proposed High School for the Preservation Arts: Model Lesson Plan using the 1964-5 New York World's Fair.

Earth Science (Grade 10)

Aim: What is a Metamorphic Rock? How is it formed? From what is it formed?

Additional Materials: New York State Regents Earth Science reference tables.

Content: The beautiful work of art pictured opposite was sculpted from marble, a metamorphic rock. Metamorphic rock is formed under great heat and/or pressure from pre-existing sedimentary, igneous, or other metamorphic rock, by a process of re-crystallization of the pre-existing rock. This is accomplished without melting; the pre-existing minerals actually re-mineralize in order to accomodate the pressure that is being exerted on them. The result is an increase in density, for the same mass is now packed into a smaller volume. This increase in density allows marble to be a more durable material than its sedimentary pre-cursor, limestone, because marble is generally less prone to water infiltration between crystals.

Metamorphic rocks are formed in two environments: slowly over large, regional areas due to the heat and pressure generated by continental collisions; and locally, or in less-widespread geographic areas, due to the contact between very hot intrusions of magma and the surrounding rock. The types of metamorphic rock are two: foliated (banded) or non-foliated. The grades of metamorphic rock are three: low (slate), medium (schist), and high (gneiss).

Kieran J. McGuire, formerly of the High School for Art and Business, Corona, New York October, 1999

Pieta
Pietà, created by Michelangelo in his early twenties, depicts Mary as a young woman holding the dead Christ in her arms. It is a remarkable technical piece; the flesh under Christ's shoulder just above Mary's right hand seems to be soft and pliable. It is also a work of great beauty, capable of eliciting a deeply emotional response in the viewer.
In what type of geologic province can we find marble?

Application: What other quality does the higher density of marble over limestone allow for in its use as a sculpting material? (Hint: Marble has a finer texture than limestone.)

Assessment: 1) Where would you go to find large quantities of marble?
2) Why aren't foliated metemorphic rocks used more often for facades of our office buildings in New York?

Summary: Metamorphism is change in crystal structure and mineral groupings without a change in chemical composition. It occurs without melting.

Proposed High School for the Preservation Arts Model Lesson Plans

Chemistry (Grade 11)

Aim: What is Acid Rain? What is pH?

Motivation: Acid rain has caused untold damage to limestone and marble structures and statues.

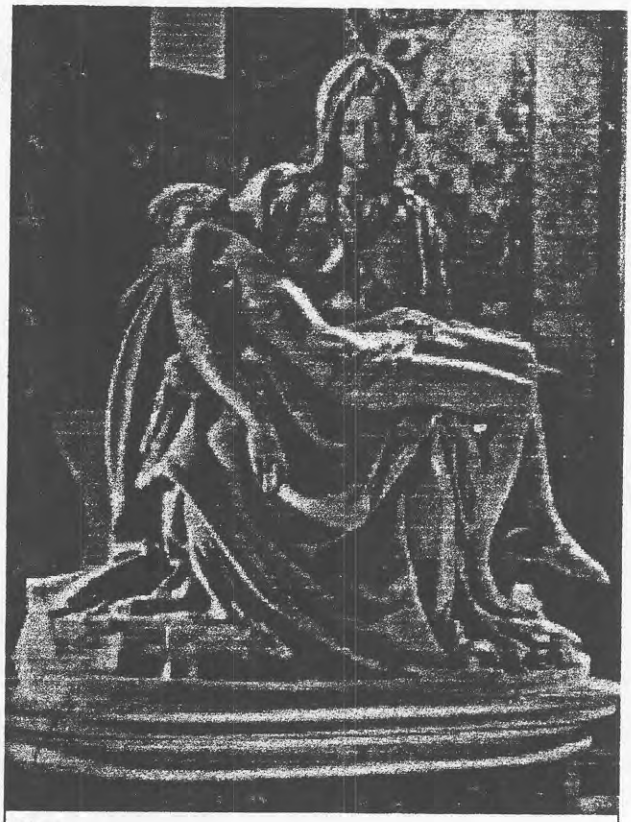
Content: Due to the formation of carbonic acid from carbon dioxide in the air, "pure" rain water is actually slightly acidic, with a pH of about 5.5. When the pH drops to 4 due to the nitrogen and sulfur oxides produced by the com bustion of fossil fuels in power plants and vehicles, damage occurs to calcium-based compounds, such as the form of calcium carbonate which we know as marble.

The measure of the acidity of a substance is known as pH. By definition, the pH of a substance equals the negative logarithm, to the base of 10, of the hydrogen-ion concentration: $pH = -\log [H^+]$
A pH of 7 is neutral. Because there is a minus sign in our equation, as the concentration of $[H^+]$ increases, the pH decreases. Therefore a pH of 4 is more acidic than a ph of 7. A pH of 10 is more basic.

Acid rain forms by the reaction: of sulfur dioxide, rain water, and oxygen in the air, which produces sulfuric acid, which is also known as battery acid (for car batteries.)

How can we prevent its damage? How can we correct the damage that has been done?

Application: When the *Pieta* being brought from Rome to New York for exhibition during the 1964-65 World's Fair, what precautions had to be taken to prevent acid rain decay?



Pieta
Pietà, created by Michelangelo in his early twenties, depicts Mary as a young woman holding the dead Christ in her arms. It is a remarkable technical piece; the flesh under Christ's shoulder just above Mary's right hand seems to be soft and pliable. It is also a work of great beauty, capable of eliciting a deeply emotional response in the viewer. It is a work in marble, a form of calcium carbonate.

Assessment: Were there other sources of acid, in addition to acid rain, which curators need to be aware of, in order to preserve and protect such great works of art?
For example, there is a marble statue of Saint Peter in Rome whose right foot has been worn down considerably due to the touching of that statue's foot by pilgrims. What has caused that spot to wear down? .

Summary: Acid damage is a real concern for lime (calcium) based materials, including mortars. How can we prevent it?

Kieran J. McGuire formerly of the High School for Art and Business, Corona, New York October, 1999

Workshop in Science
Grades 9-12

Please circle your grade level: 9 10 11 12

Think about your experience in the workshop you just attended and complete the following questions:

1. How would you rate the clarity of the lesson?

Extremely Clear	Very Clear	Mostly Clear	Somewhat Clear	Totally Unclear

2. How interesting did you find the lesson?

Extremely Clear	Very Clear	Mostly Clear	Somewhat Clear	Totally Unclear

3. How useful was the lesson in helping you learn more about preservation?

Extremely Clear	Very Clear	Mostly Clear	Somewhat Clear	Totally Unclear

4. As a result of the workshop, do you believe that you have a greater understanding of the ways that science can help you understand more about historic preservation?

Yes	Unsure	No

5. How would you rate the overall quality of the workshop?

Excellent	Very Good	Average	Below Average	A Failure

6. Would you recommend the workshop to other students?

Definitely Would	Probably Would	Maybe would/Maybe would not	Probably Would Not	Definitely Would Not

Thank you!

Workshop in English
Grades 9-12

Please circle your grade level: 9 10 11 12

Think about your experience in the workshop you just attended and complete the following questions:

1. How would you rate the clarity of the lesson?

Extremely Clear	Very Clear	Mostly Clear	Somewhat Clear	Totally Unclear

2. How interesting did you find the lesson?

Extremely Clear	Very Clear	Mostly Clear	Somewhat Clear	Totally Unclear

3. How useful was the lesson in helping you learn more about preservation?

Extremely Clear	Very Clear	Mostly Clear	Somewhat Clear	Totally Unclear

4. As a result of the workshop, do you believe that you have a greater understanding of the ways that reading literature can help you understand more about the past?

Yes	Unsure	No

5. How would you rate the overall quality of the workshop?

Excellent	Very Good	Average	Below Average	A Failure

6. Would you recommend the workshop to other students?

Definitely Would	Probably Would	Maybe would/Maybe would not	Probably Would Not	Definitely Would Not

Thank you!

Workshop in Art
Grades 9-12

Please circle your grade level: 9 10 11 12

Think about your experience in the workshop you just attended and complete the following questions:

1. How would you rate the clarity of the lesson?

Extremely Clear	Very Clear	Mostly Clear	Somewhat Clear	Totally Unclear

2. How interesting did you find the lesson?

Extremely Clear	Very Clear	Mostly Clear	Somewhat Clear	Totally Unclear

3. How useful was the lesson in helping you learn more about preservation?

Extremely Clear	Very Clear	Mostly Clear	Somewhat Clear	Totally Unclear

4. As a result of the workshop, do you believe that you have a greater understanding of the ways that art can help you understand more about the past?

Yes	Unsure	No

5. How would you rate the overall quality of the workshop?

Excellent	Very Good	Average	Below Average	A Failure

6. Would you recommend the workshop to other students?

Definitely Would	Probably Would	Maybe would/Maybe would not	Probably Would Not	Definitely Would Not

Thank you!

Workshop in Social Studies
Grades 9-12

Please circle your grade level: 9 10 11 12

Think about your experience in the workshop you just attended and complete the following questions:

1. How would you rate the clarity of the lesson?

Extremely Clear	Very Clear	Mostly Clear	Somewhat Clear	Totally Unclear

2. How interesting did you find the lesson?

Extremely Clear	Very Clear	Mostly Clear	Somewhat Clear	Totally Unclear

3. How useful was the lesson in helping you learn more about preservation?

Extremely Clear	Very Clear	Mostly Clear	Somewhat Clear	Totally Unclear

4. As a result of the workshop, do you believe that you have a greater understanding of the ways that the social sciences can help you understand more about the past?

Yes	Unsure	No

5. How would you rate the overall quality of the workshop?

Excellent	Very Good	Average	Below Average	A Failure

6. Would you recommend the workshop to other students?

Definitely Would	Probably Would	Maybe would/Maybe would not	Probably Would Not	Definitely Would Not

Thank you!

Historic Preservation Workshop at Queens Museum of Art
End-of-Day Survey

Circle your grade level: 9 10 11 12

Please think about the activities you experienced today and complete the following questions:

1. What was the best part of the day?

The Opening Session (The Welcome, Keynote Speaker, and Worlds Fair Presentation	The Workshops Presented by the Teachers	The Visit to the Worlds Fair Exhibit at the Queens Museum	The Rubbings of the Granite Relief	The Wrap-up and End of Day Activities

2. If you could, how would you change the day?

I'd like more lectures; they would give me a better overall picture.	I'd like more workshop time.	I'd like to have had more time to visit the Exhibit.	I'd like to have had more time to work on the rubbings.	I'd would liked to have had more time to sum up the day.

3. A primary goal today was to allow you to understand the importance of historic preservation. How would you describe your attitude now toward preservation?

I believe that preservation is an important way to capture the past, maintain the present, and ensure the future.	I believe that preservation is an important activity, but I am unsure of how it relates to me or to the world in which I live.	While preservation may be important, I do not believe it is a relevant activity.

4. How would you evaluate the entire day?

Excellent	Very Good	Average	Below Average	Failure

Thank you!

Workshop in Social Studies
Grades 9-12

Please circle your grade level: 9 10 11 12

Think about your experience in the workshop you just attended and complete the following questions:

1. How would you rate the clarity of the lesson?

Extremely Clear	Very Clear	Mostly Clear	Somewhat Clear	Totally Unclear

2. How interesting did you find the lesson?

Extremely Clear	Very Clear	Mostly Clear	Somewhat Clear	Totally Unclear

3. How useful was the lesson in helping you learn more about preservation?

Extremely Clear	Very Clear	Mostly Clear	Somewhat Clear	Totally Unclear

4. As a result of the workshop, do you believe that you have a greater understanding of the ways that the social sciences can help you understand more about the past?

Yes	Unsure	No

5. How would you rate the overall quality of the workshop?

Excellent	Very Good	Average	Below Average	A Failure

6. Would you recommend the workshop to other students?

Definitely Would	Probably Would	Maybe would/Maybe would not	Probably Would Not	Definitely Would Not

Thank you!

Historic Preservation Workshop at Queens Museum of Art
Instructors' Survey

1. Do you believe that today's activities enhanced the students' attitudes toward historic preservation?

2. What was the most significant aspect of today's activities?

3. Do you believe that today's activities provided you an opportunity to design lessons that will be carried back into your own classroom?

4. Given the opportunity, how would you restructure the day?

5. How do you think the students responded to the day?

6. Using the scale below, how would you judge the day?

Excellent	Very Good	Average	Below Average	A Failure

Workshop in English
Grades 9-12

Please circle your grade level: 9 10 11 12

Think about your experience in the workshop you just attended and complete the following questions:

1. How would you rate the clarity of the lesson?

Extremely Clear	Very Clear	Mostly Clear	Somewhat Clear	Totally Unclear

2. How interesting did you find the lesson?

Extremely Clear	Very Clear	Mostly Clear	Somewhat Clear	Totally Unclear

3. How useful was the lesson in helping you learn more about preservation?

Extremely Clear	Very Clear	Mostly Clear	Somewhat Clear	Totally Unclear

4. As a result of the workshop, do you believe that you have a greater understanding of the ways that reading literature can help you understand more about the past?

Yes	Unsure	No

5. How would you rate the overall quality of the workshop?

Excellent	Very Good	Average	Below Average	A Failure

6. Would you recommend the workshop to other students?

Definitely Would	Probably Would	Maybe would/Maybe would not	Probably Would Not	Definitely Would Not

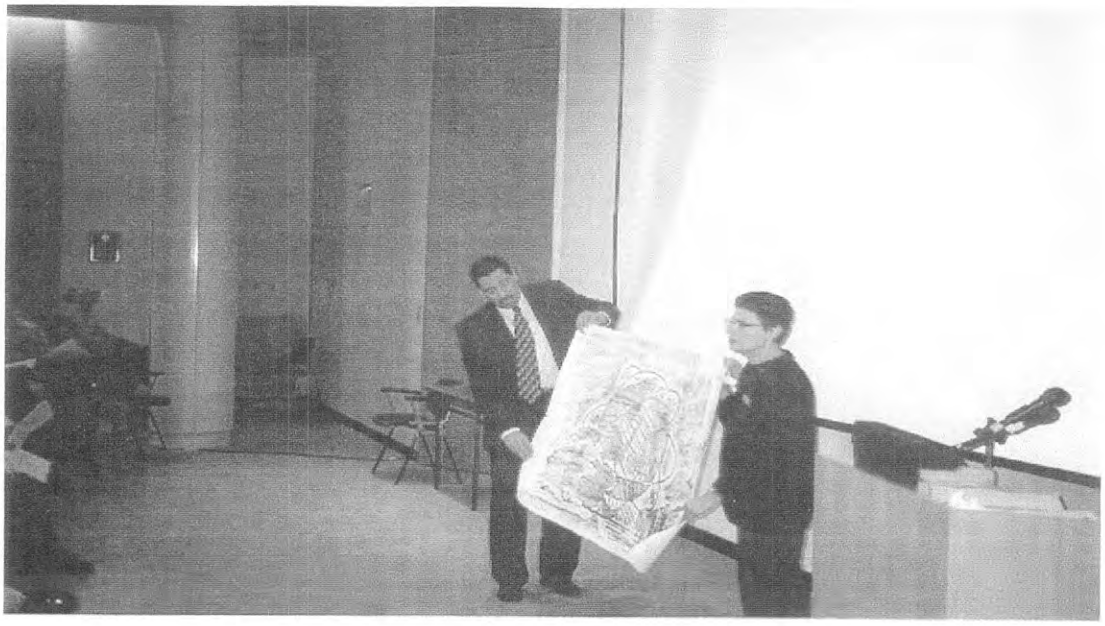
Thank you!

Historic Preservation Workshop October 2, 1999
Queens Museum of Art, Reception Area over looking Clarisphere

Historic Preservation Workshop at Queens Museum of Art, Reception Area

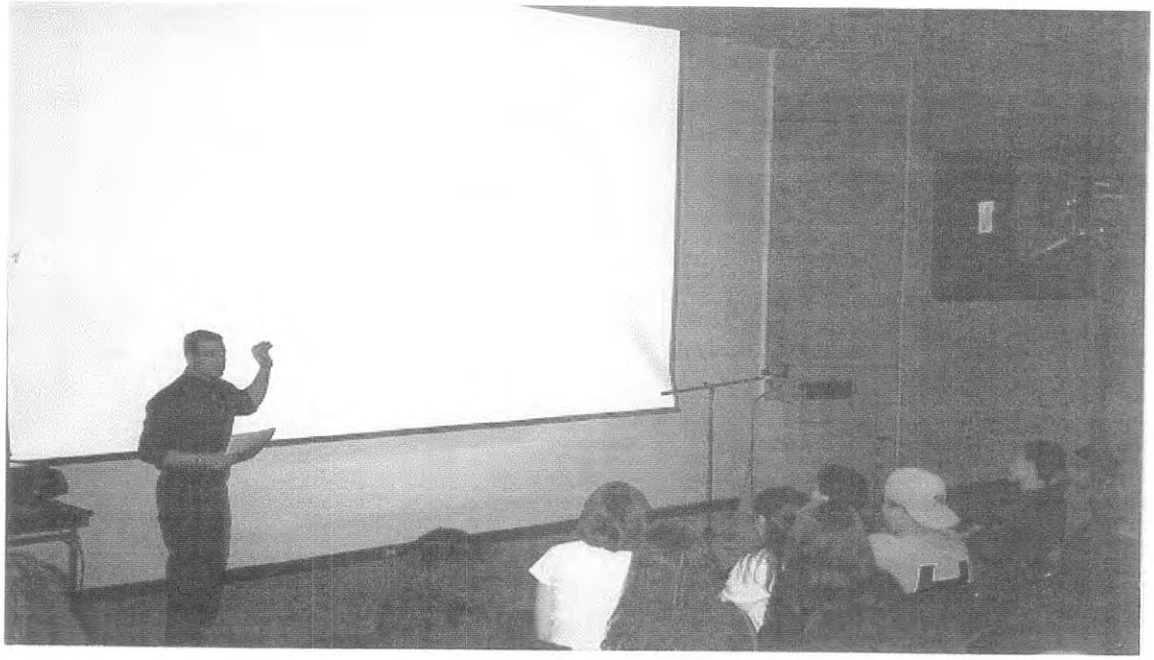
Brooklyn Councilmember Ken Fisher
Speaking to students during the welcome

Queens New York, Councilmember John Sabini
Speaking to the students during the Welcome



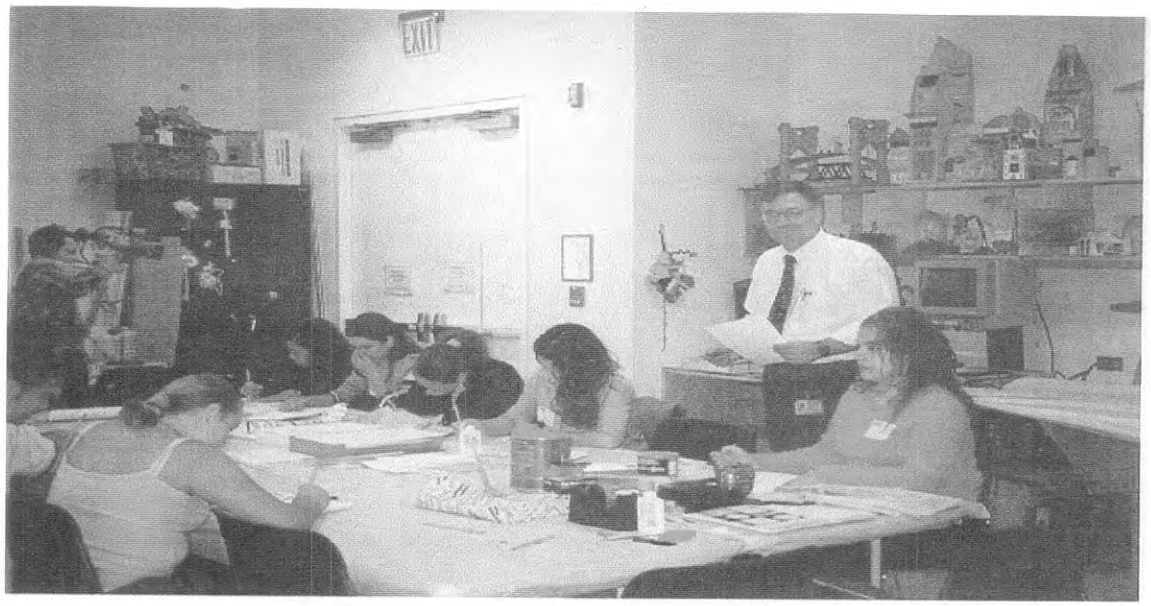
Principal Stephen Drakes (left) and Curator Sharon Vatsky (right)
Showing a sample "rubbing" from the Matt Mullican's granite relief

Alex Herrera, Director of Technical Services
New York City Landmarks Conservancy
Keynote Speaker

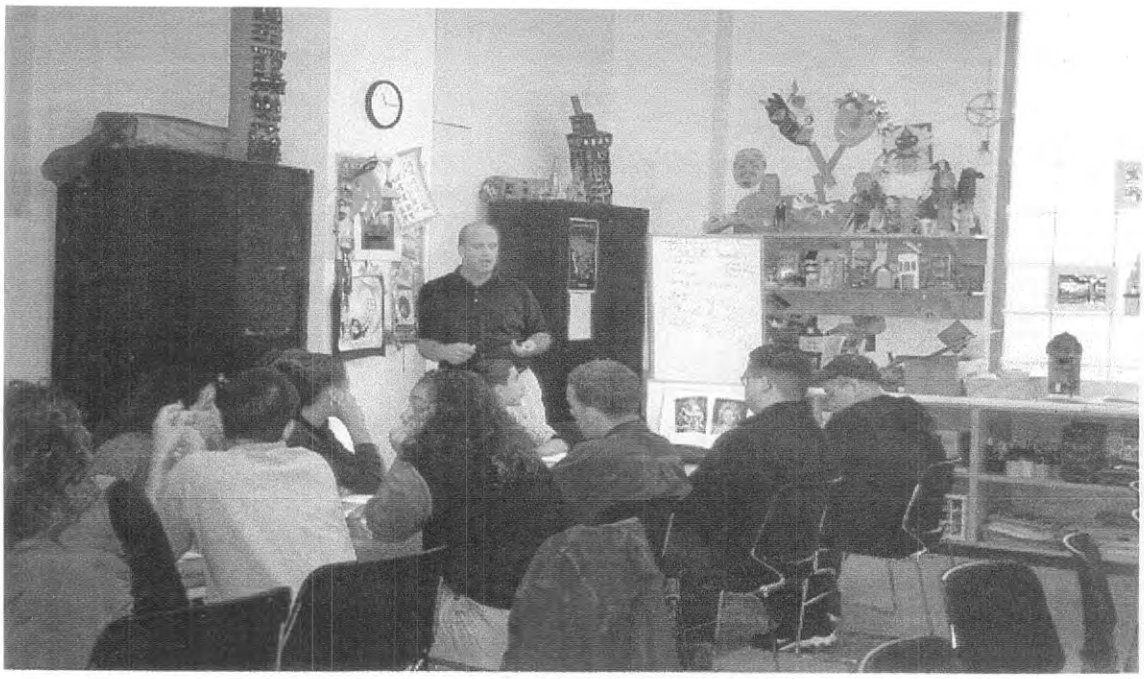


David Moyal
Social Studies Teacher and Class

Lynda Aron
English Teacher and Class

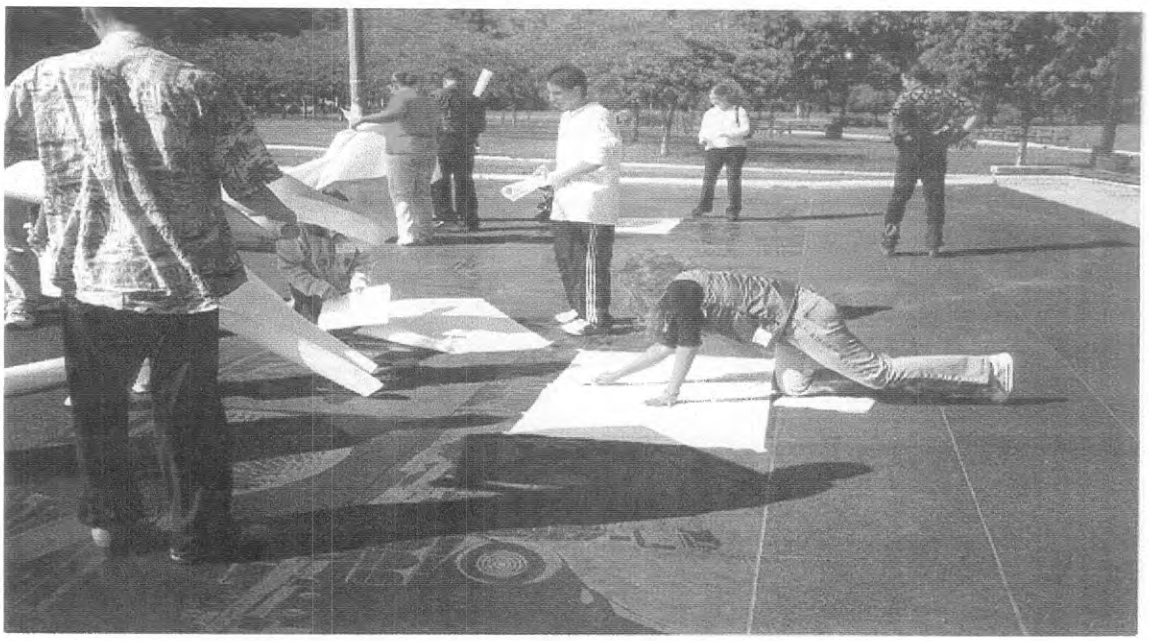


Bryan Serra
Art Teacher and Class



Kieran McGuire
Science Teacher and Class

Matt Mullican's World's Fair Buildings granite relief with students doing rubbings (1964 Unisphere in background)



Students doing rubbings at Matt Mullican's World's Fair granite relief

Felipe Gibaldo
High School of Arts and Business
Student and Intern speaking to the students about his internship experience