Integrating Landscape Architecture
and
Visual Quality Management

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MnDOT Office of Technical Support

Integrating LA and VQM
Overview

- Landscape Architecture in Road Design

- Visual Quality vs. Aesthetics

- Fundamentals of Visual Design

- Visual Impact Assessment (VIA) Process

- Corridor & Project Design Elements to Address

- Visual Quality Management (VQM) Process

- AIMS Research Project and Findings

What Is Landscape Architecture ?

An Art & Science focused on Land Analysis, Planning, Design, Management, Preservation and Rehabilitation

A broad and diversified profession that integrates a knowledge of art, architecture, engineering, and social and environmental sciences in physical planning & design

What Do Landscape Architects Do ?

Landscape Architects seek to integrate elements from all these fields to preserve, design and manage aesthetic, practical, safe, healthy and sustainable relationships between people, living things, natural and built development and the land.

A Legacy of Landscape Architecture in Roadway Design

Landscape architects were critically involved in the location, alignment, design and construction of many of our nations early roadways ... and they worked in close collaboration with engineers.

With few exceptions, the roads we most love and cherish as a nation were aligned, crafted and placed within the landscape with the able assistance and foresight of landscape architects.

Paul Daniel Marriott (Nat'l. Trust for Historic Preservation)

A Legacy of Landscape Architecture in Roadway Design

Building on Olmsted's legacy, landscape architects such as Cleveland, Eliot, Jensen, Abbott and Clarke, through park road & parkway design, were the first modernists to study vehicle movement thru our nation's landscape.

A Legacy of Landscape Architecture in Roadway Design

It was important to have the road lie lightly on the land like a ribbon

Landscape architect Stanley Abbott coined this phrase in laying out the entire length of the Blue Ridge Parkway

A Legacy of Landscape Architecture in Roadway Design

While the earliest parkways were merely wider and grandly furnished roadways or "boulevards" responding to existing urban grids… the evolved parkways were often designed to help structure urban growth rather than to just respond to it.

Landscape Architecture in Roadway Design
New Mission Moves Us Forward & Backward

The 1944 Defense Highways Act helped initiate the decline of more collaborative and sensitive highway design in favor of urgent and rapid construction of military highways to satisfy national security and mass employment needs.

- Wider pavement with longer and flatter curves for faster movement.

- Flattened vertical alignments allowing military convoys to maintain uphill velocity.

In 1956 AASHO published the first national standards for roadways with seemingly little room for creative and flexible design?
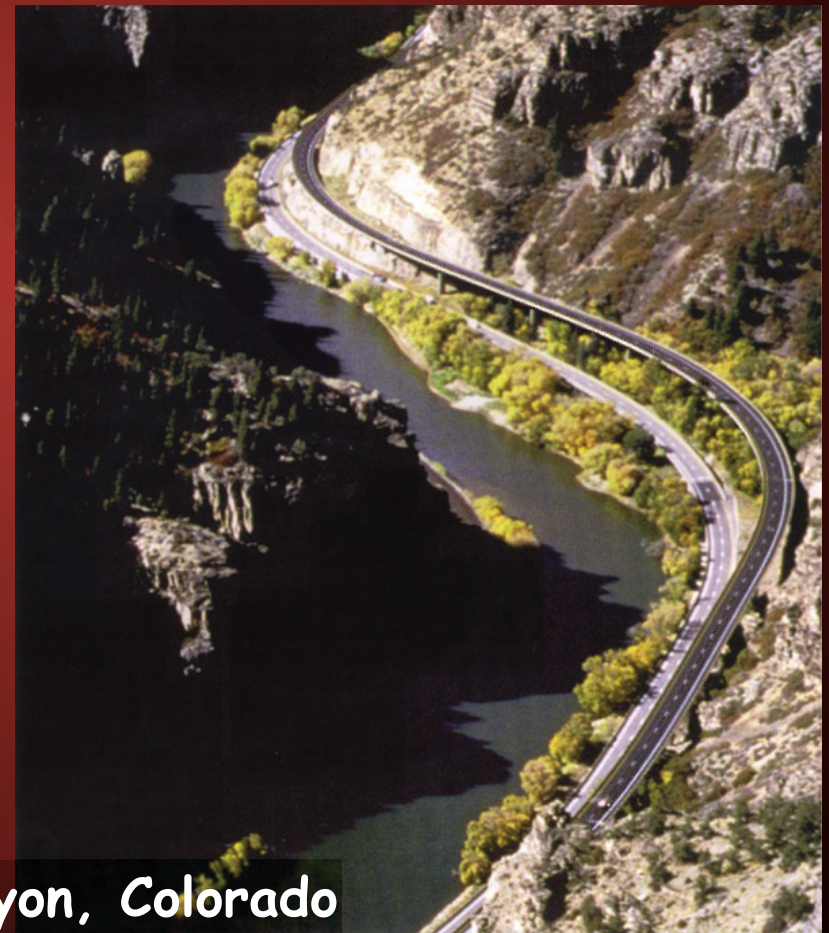
Landscape Architecture in Roadway Design
Moving Forward Again

The tide in roadway design has been shifting toward context sensitivity since the 1960's

The public began to demand more respect and sensitivity toward impacted communities and environment. Federal and state legislation and guidance has continued to follow suit.
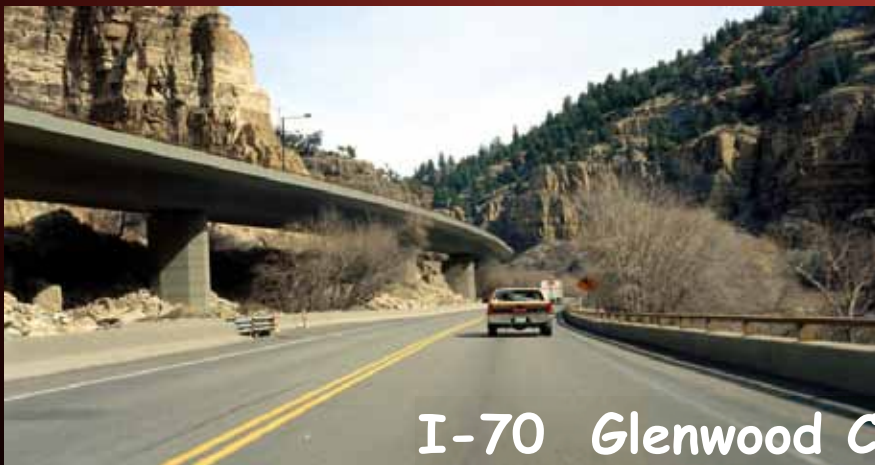
I-70 Glenwood Canyon, Colorado

Aesthetics vs. Visual Quality

Aesthetics:

Branch of philosophy dealing with the theory, nature, and perception of what is beautiful

Visual Quality:

What people as ÒviewersÓ like and dislike about the visual resources that compose scenes within their viewing environment

Visual Quality

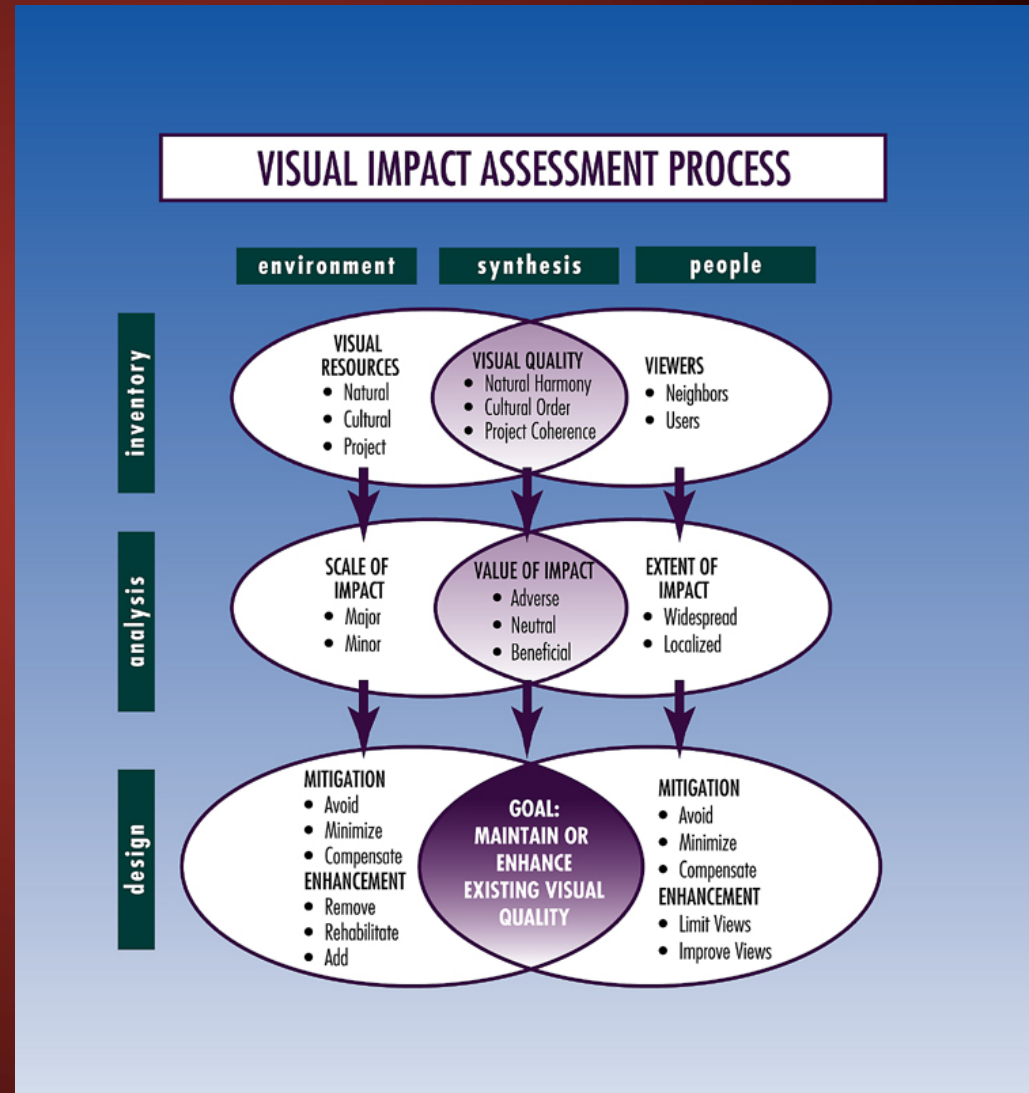Natural   Cultural   Project

What viewers like and dislike about the visual resources in the environment around them and a composite of their perceived sense of:

- Natural Harmony
- Cultural Order
- Project Coherence

Visual Impact Assessment (VIA) Process

MnDOT developed a 4 Phase - 6 Step **VIA** Process for FHWA sanction and advocacy nationally

Refer online to the MnDOT HPDP Handbook É Part II, Section D - Visual Quality É for ÒHow To AssessÓguidance including a video link

VISUAL IMPACT ASSESSMENT PROCESS

environment | synthesis | people

inventory

VISUAL RESOURCES
- Natural
- Cultural
- Project

VISUAL QUALITY
- Natural Harmony
- Cultural Order
- Project Coherence

VIEWERS
- Neighbors
- Users

analysis

SCALE OF IMPACT
- Major
- Minor

VALUE OF IMPACT
- Adverse
- Neutral
- Beneficial

EXTENT OF IMPACT
- Widespread
- Localized

design

MITIGATION
- Avoid
- Minimize
- Compensate

ENHANCEMENT
- Remove
- Rehabilitate
- Add

GOAL: MAINTAIN OR ENHANCE EXISTING VISUAL QUALITY

MITIGATION
- Avoid
- Minimize
- Compensate

ENHANCEMENT
- Limit Views
- Improve Views

Visual Impact Assessment (VIA)

Phase 1: Inventory

Step 1: Identify affected visual resources

- Natural Environment
- Cultural Environment
- Project Environment

Step 2: Identify affected people (ʼviewersʼ)

- Neighbors
- Travelers

Phase 2: Synthesis

Step 3: Define existing visual quality

- What viewers like & dislike about existing views

Visual Impact Assessment (VIA)

Phase 3: Analysis

Step 4: Analyze impacts to visual quality

- Major or minor scale of impact to visual resources
- Widespread or localized scale of impact to viewers
- Adverse or beneficial impacts on visual quality

Step 5: Summarize visual impacts by alternative

- Advantages and disadvantages of each alternative

Phase 4: Design

Step 6: Mitigate adverse visual impacts and enhance existing visual quality

Fundamentals of Visual Design

- Form
- Character
- Detail
- Scale
- Proportion

Form

Character

Detail

Scale

Vitruvian Man & PHI
"Divine" Proportions?
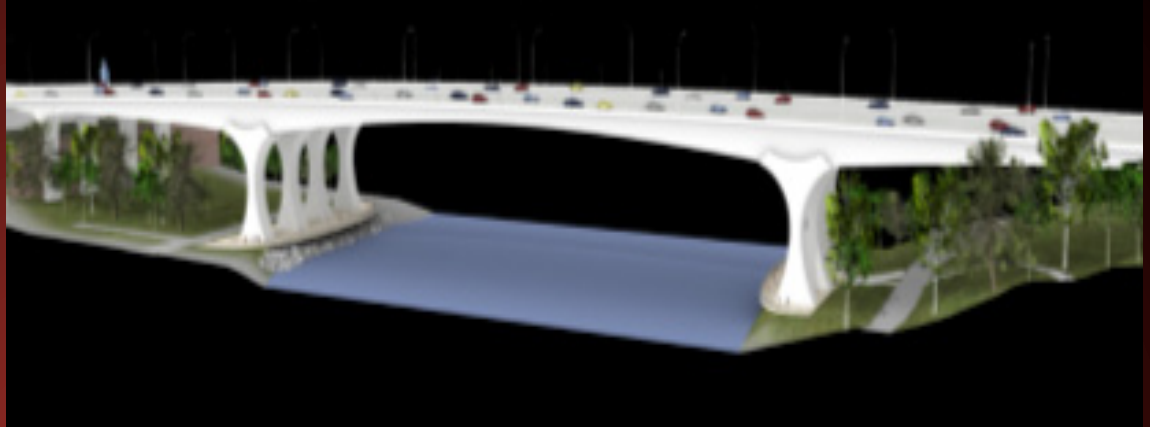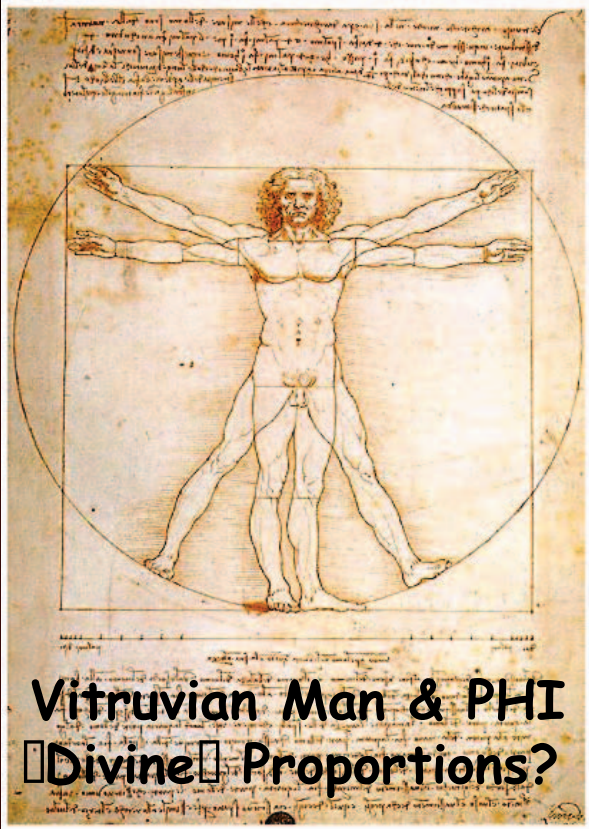
Proportion

Visual Quality Management Process

MnDOT's AASHTO & FHWA Award Winning Process

- Early involvement of someone experienced in visual quality and aesthetic design

- Comprehensive visual impact assessment and aesthetic design coordination

- Early involvement of a multidisciplinary team and a stakeholder and public review committee tailored to the project or corridor

Visual Quality Review Committee

- Reviews aesthetic design issues

- Recommends appropriate architectural and aesthetic design treatments

Visual Quality Review Committee
Workbook

Ongoing process documentation, decision points, graphic exhibits
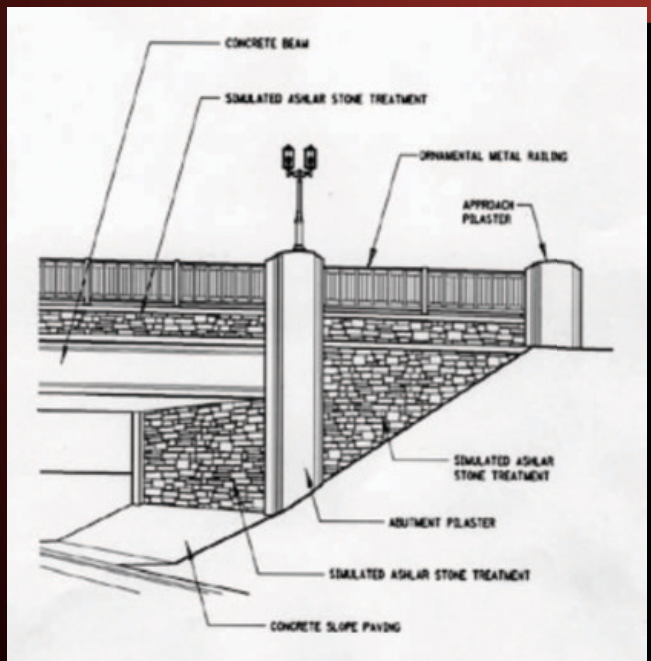
Vision Development
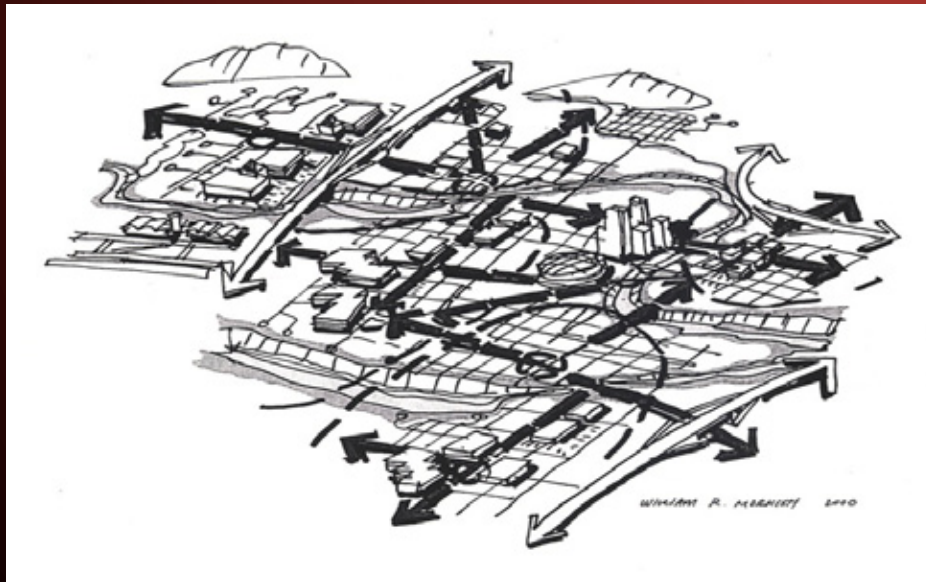
- Focusing on self-discovery to understand what communities value and aspire to

- Integrating design preferences with potential and feasible design solutions
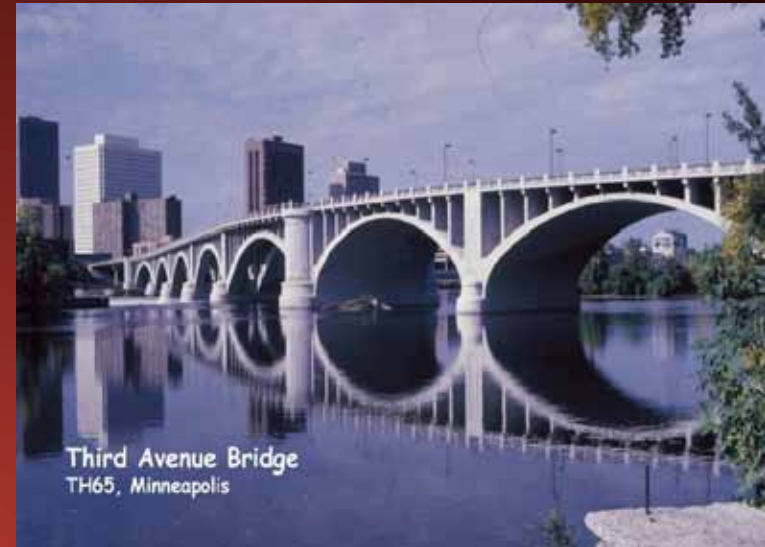
Understanding Community Values

- Requires early and continuous public and stakeholder involvement

- Adds meaning and value to inform aesthetic decision-making

- Increases the likelihood of project acceptance by the public and stakeholders
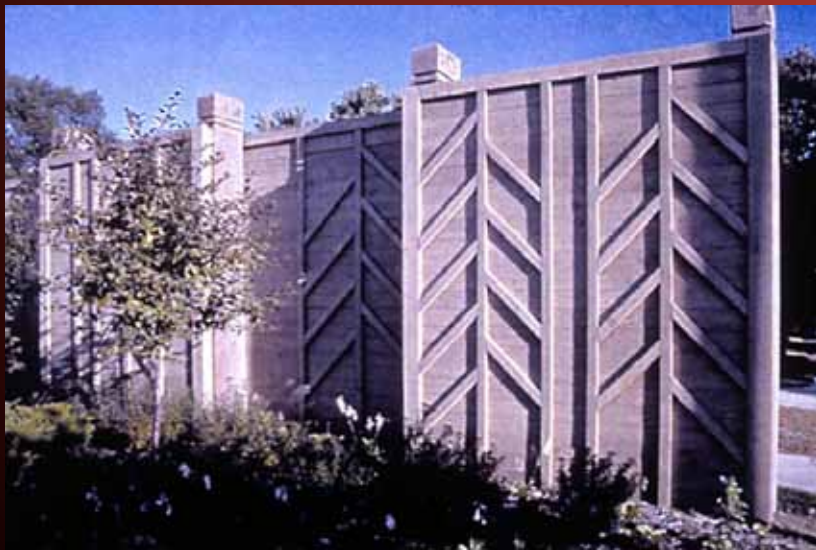
Visual Elements

Paving

Third Avenue Bridge
TH65, Minneapolis

Bridges

Retaining Walls

Noise Barriers

Grading

Signing

Lighting

Landscaping

Fencing

Ponds,Wetlands & Rain Gardens
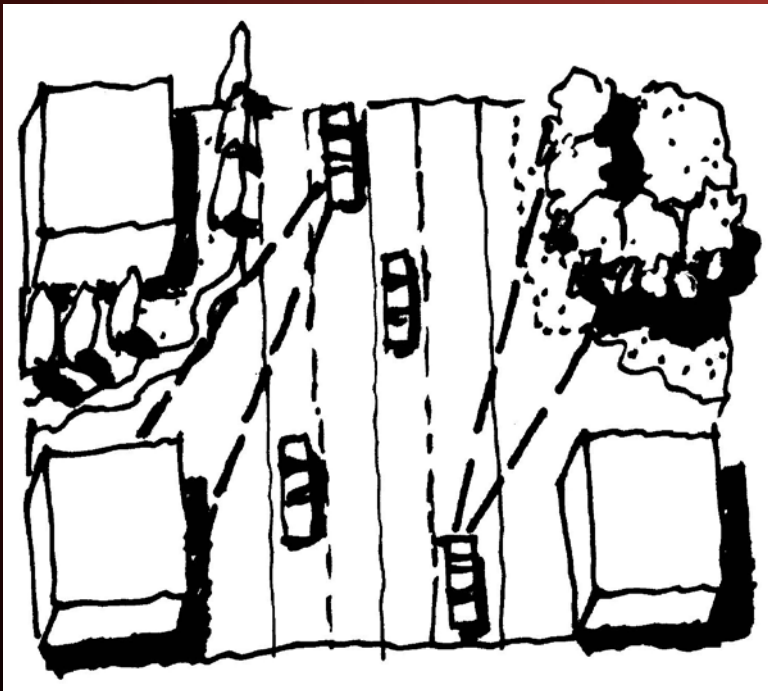
Transit Facilities

Pedestrian and Bicycle Facilities

Visual Cueing

The 3 - dimensional design of the physical environment, surrounding and including transportation ways, informs and influences movement, activity and behavior.

Visual Cueing

Cue to speed up
or slow down ??

Material Selection & Design Concerns

- Functional and operational performance?
- Financial feasibility?
- Availability?
- Constructability?
- Life cycle analysis and costs:
  - Durability and service life?
  - Repair and replacement requirements?
  - Maintenance requirements?
  - Maintainability and liability?
  - Waste stream and environmental concerns?
- Commitment beyond the project … who preserves investments and design intent?

Visual Quality and Costs

- Involve stakeholders in taking a comprehensive and balanced approach to aesthetic considerations, planning, and design... early and continuously in project development ... develop a "shared vision"

- Build solid relationships and alliances to inform effective decision making and partnership opportunities

- Consistent with Mn/DOT's "**Cost Participation Policy**", articulate upfront what is negotiable and what is not.

(http://www.dot.state.mn.us/stateaid)
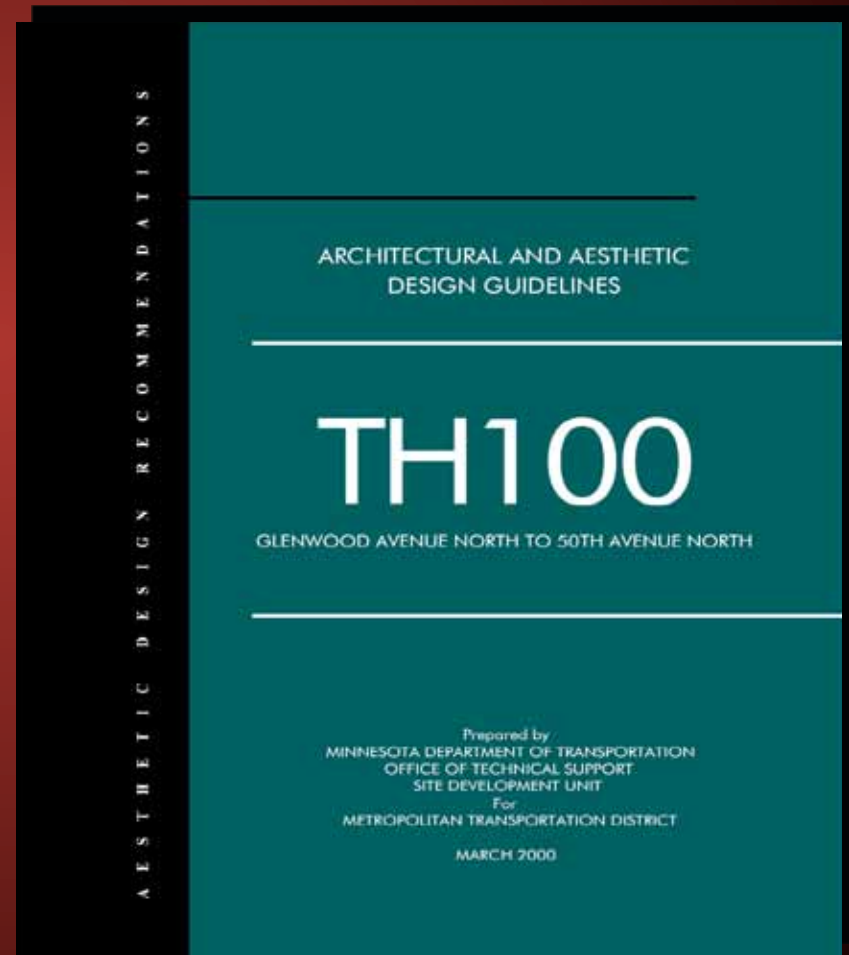
Cost Participation Policy
Aesthetic Elements

- An integral component of highway corridors
- Not intended to impede CSS
- Required mitigation is not an aesthetic element
- Design elements considered necessary for a project are not aesthetic elements unless aesthetic considerations were the primary basis for use of the elements
- Basic aesthetic treatments included as a standard component of a project element (standard rustications and surface treatments) are not aesthetic elements
- Etc …

Visual Quality Manuals

Corridor-Specific
or
Project-Specific

Describes and illustrates consensus decisions and recommendations for all key design elements of transportation corridors and projects


AESTHETIC DESIGN RECOMMENDATIONS

ARCHITECTURAL AND AESTHETIC DESIGN GUIDELINES

TH100

GLENWOOD AVENUE NORTH TO 50TH AVENUE NORTH

Prepared by
MINNESOTA DEPARTMENT OF TRANSPORTATION
OFFICE OF TECHNICAL SUPPORT
SITE DEVELOPMENT UNIT
For
METROPOLITAN TRANSPORTATION DISTRICT

MARCH 2000

Visual Quality Manuals

Design Theme

decorative metal railings

elegant pier caps

stylized pilaster end posts
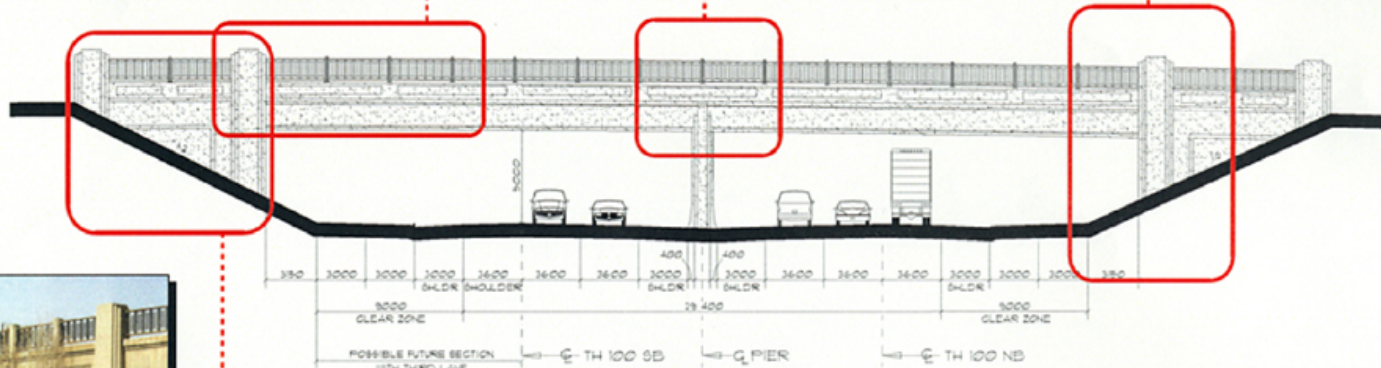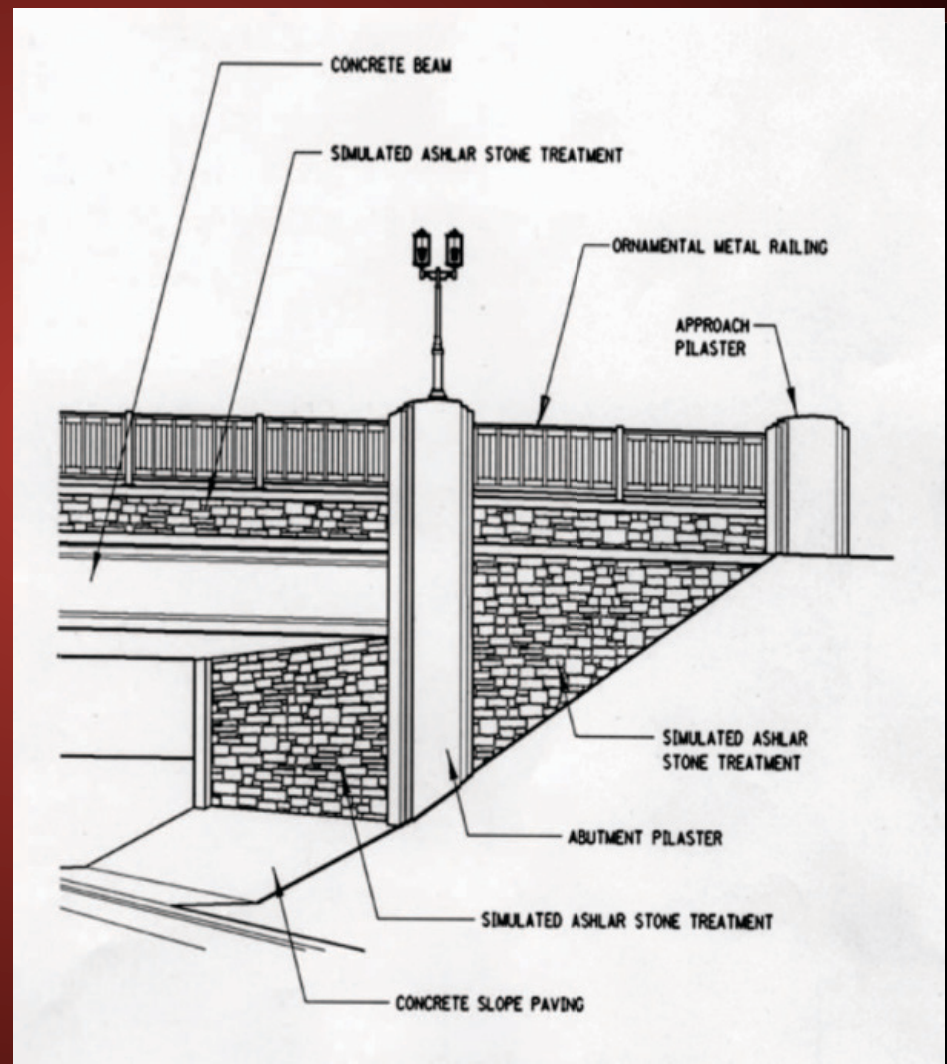
relief panel abutments
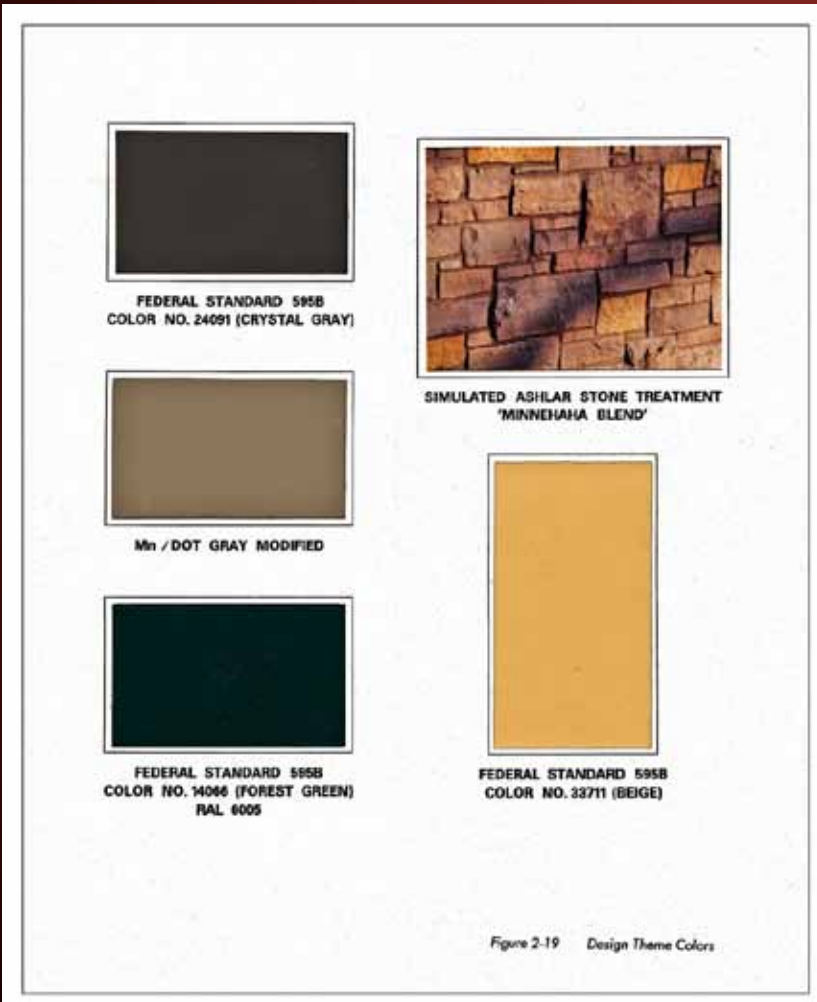
GENERAL ELEVATION

Aesthetic Treatment Proposal for

T.H. 100 Highway Corridor Development

Structures Design Concept

Visual Quality Manuals

Illustrating the architectural and aesthetic design framework for a transportation project / corridor

Visual Quality Manuals

FEDERAL STANDARD 595B
COLOR NO. 24091 (CRYSTAL GRAY)

Mn/DOT GRAY MODIFIED

FEDERAL STANDARD 595B
COLOR NO. 14066 (FOREST GREEN)
RAL 6005

SIMULATED ASHLAR STONE TREATMENT
'MINNEHAHA BLEND'

FEDERAL STANDARD 595B
COLOR NO. 33711 (BEIGE)

Figure 2-19   Design Theme Colors

TYPE J & M

TYPICAL LANDSCAPE CORRIDOR TREATMENT
CONCEPTUAL VEGETATION TYPES

INFORMAL MIXED DECIDUOUS TREES & SHRUBS

PURPOSE

Large, Natural Appearing Plant Masses to provide Softening, Screening, Diversity, Habitat, Visual Impact, and Winter Interest with Reduced Maintenance Levels

SUGGESTED SPECIES

Deciduous Trees: oak, ash, poplar, maple, hackberry, elm, honeylocust
Ornamental Trees: hawthorn, plum, tree lilac, Amur maple, chokecherry, crabapples, etc.
Large Shrubs: sumac, buffaloberry, junipers, Amur maple, dogwood, lilac, plum, hazelnut, peashrub, viburnums, false spirea, etc.

APPROX. SIZE & SPACING

18" Seedling-1.5" Cal.
Variable O.C.
6' Ht.-1.5" Cal.
8'-20' O.C.
18"-2' Ht.
4'-6' O.C.

Visual Quality Management Process
Benefits

More likelihood
for success:

- Community acceptance

- Environmental compatibility

- Financial feasibility & value

- Timeliness of delivery

- Performance functions

- Preservation of investments

AIMS Research
Aesthetic Initiative Measurement System
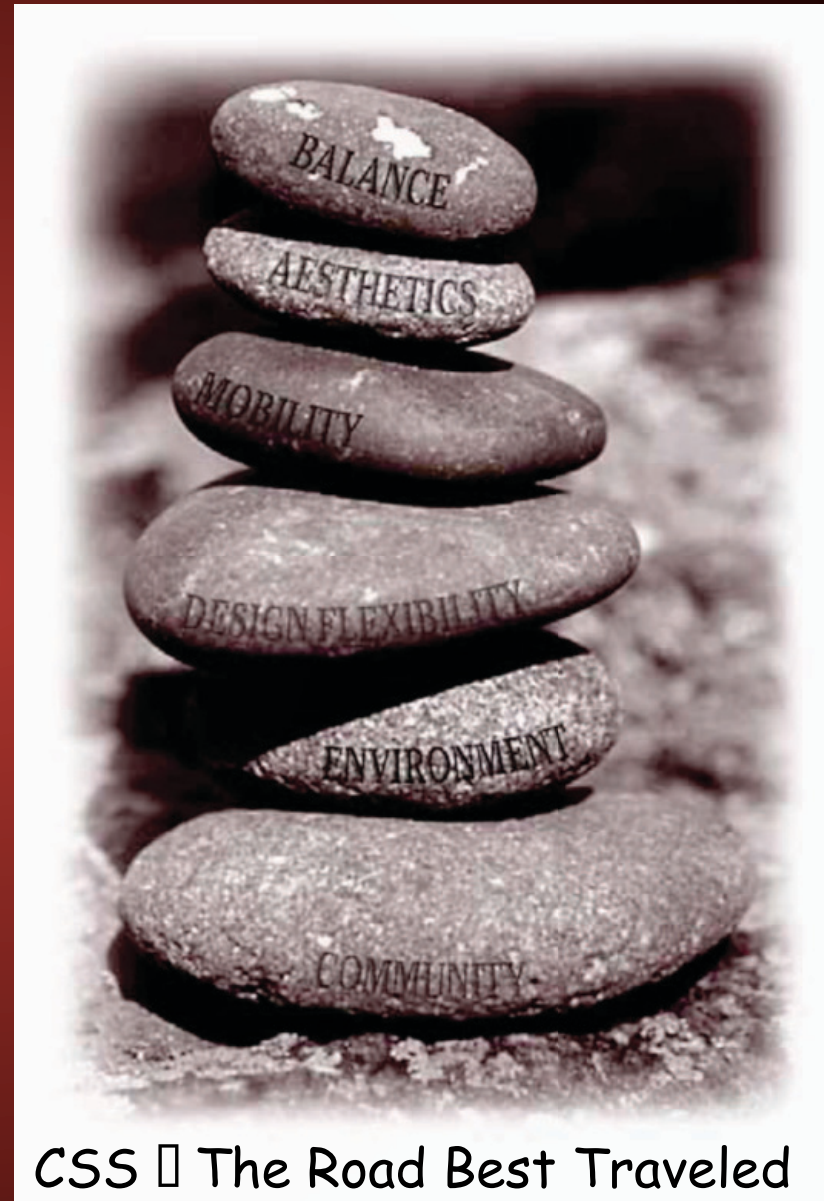
AIMS I Lessons Learned

FHWA Environmental Excellence Award for Research

- To achieve attractiveness and to avoid unattractiveness, invest in maintenance.
- Views of landscape context create the most attractive views.
- Highway location and design should intentionally open or screen views.
- All urban highways should include a comprehensive planting design strategy.
- All structures in the right-of-way should meet a minimum level of aesthetic quality.

Balanced Process and Outcomes

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CSS ÐThe Road Best Traveled