



# BRIDGE Architecture of the 21<sup>st</sup> Century

Form Follows Function: Variations on a Theme

Paul Kinderman PE AIA

State Bridge and Structures Architect

Washington State Department of Transportation

# Form Follows Function: Variations

- FORM FOLLOWS FUNCTION  
1910 LOUIS SULLIVAN
- FORM IS IDENTICAL WITH FUNCTION GAUDI 1910
- FORM FOLLOW FORMULA  
DISCHINGER 1930 FRANZ
- WHO CARES, PEOPLE WANT BOTH  
WRIGHT 1940 FRANK LLOYD
- FORM FOLLOWS FUNDING  
JOHNSON 1970 PHILLIP
- FUNCTION FOLLOWS FORM  
BILLINGTON 1980 DAVID
- FORM FOLLOWS FUN ANONYMUS

# West Trent Bridge: Spokane Washington

- Function Follows Form: *The Tower and the Bridge* David Billington

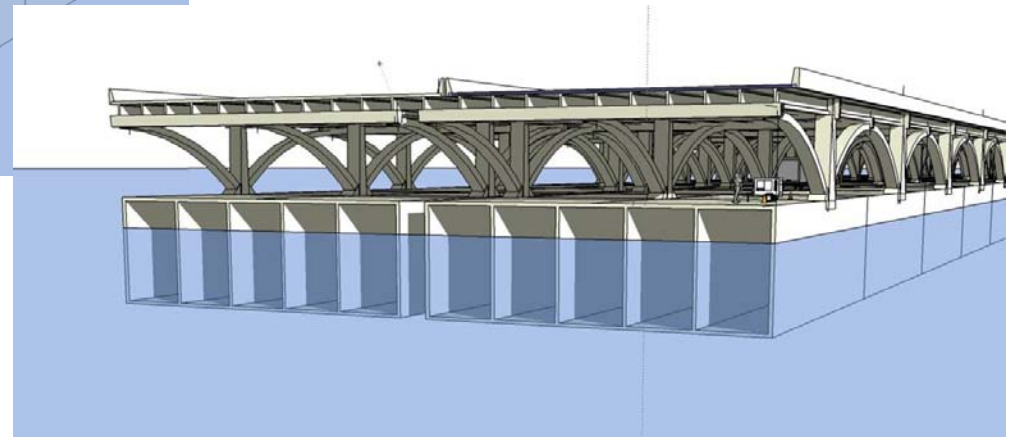
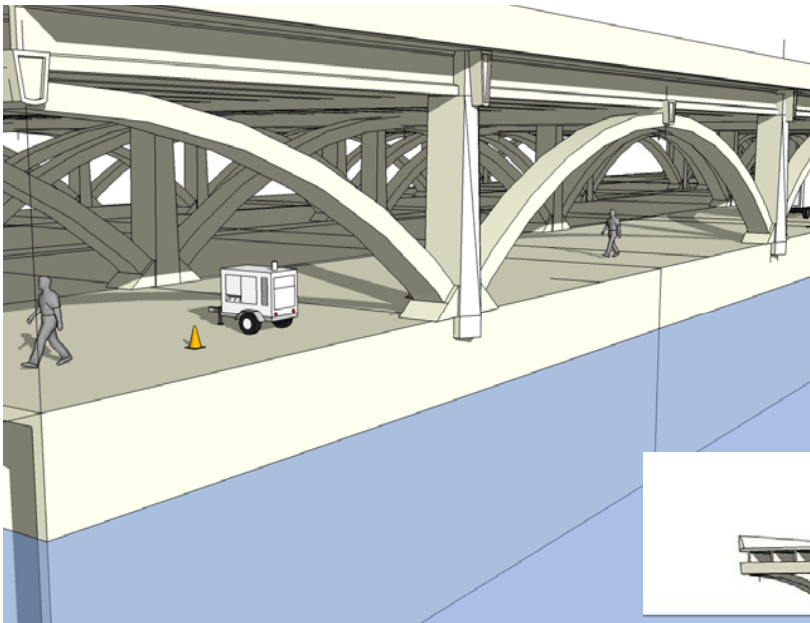


Paul D. Kinderman PE AIA  
Bridge Architecture of the 21<sup>st</sup>  
Century

Western Bridge Engineers Seminar  
2007

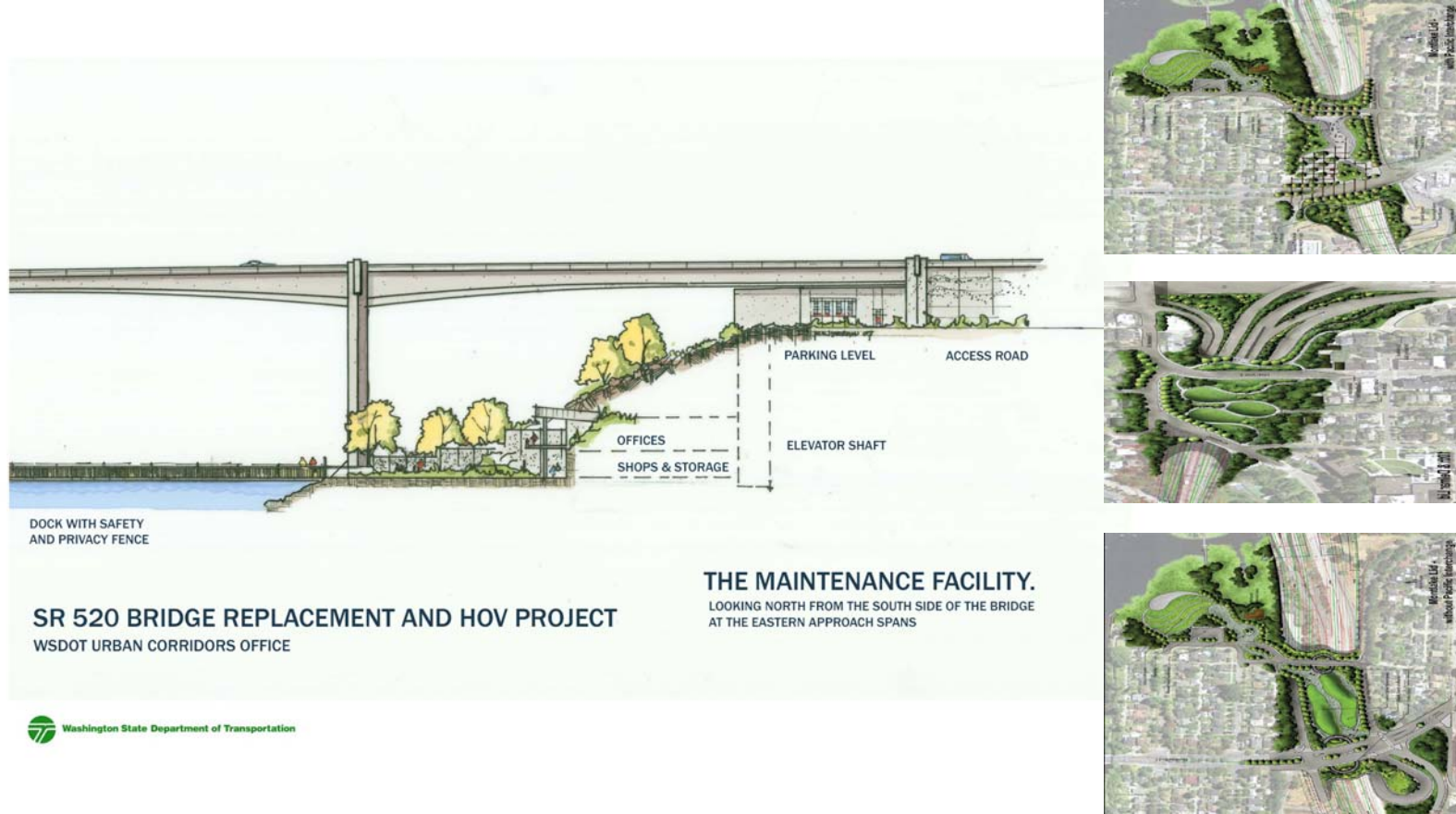
# Mega Project: SR520 Evergreen Point Floating Bridge

- Form Follows Fellows: Montlake neighborhood 'Better Bridges' group influences design



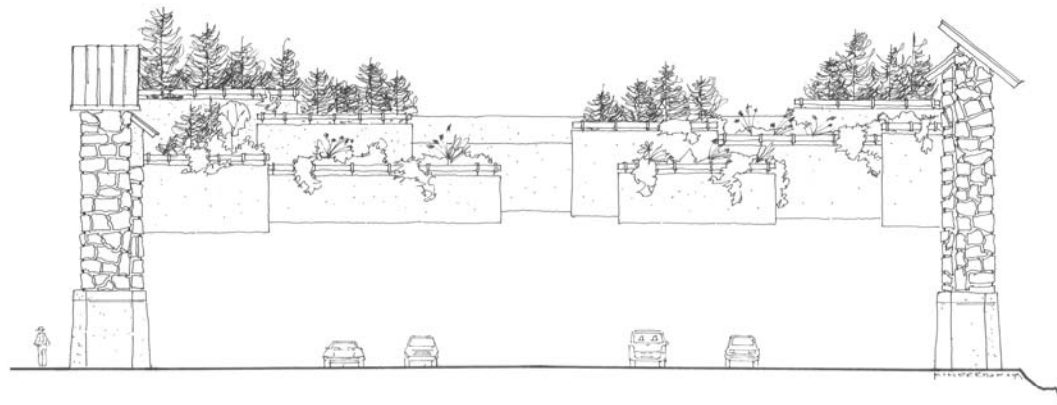
# Mega Project: SR 520 Evergreen Point Floating Bridge

- Form Follows Foliage: The neighborhood groups would rather not see



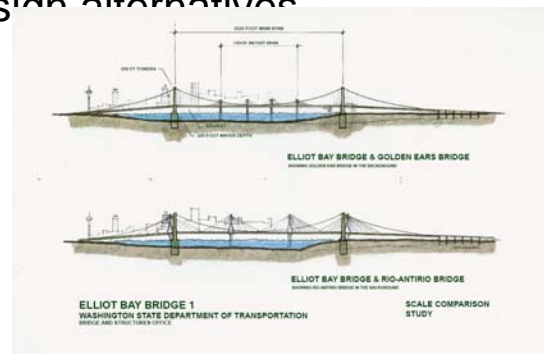
# Mega Project: I 90 Hyak to Easton

- Form Follows Foliage: Lid provides positive impact on visual quality ratings



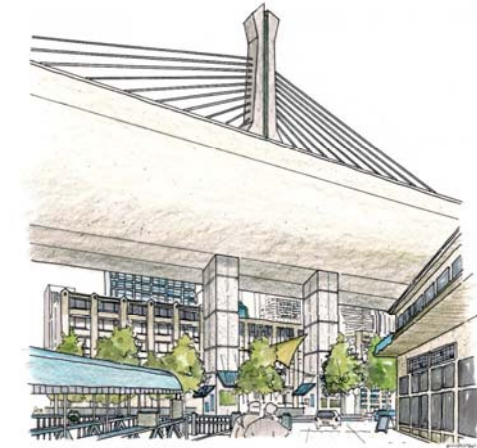
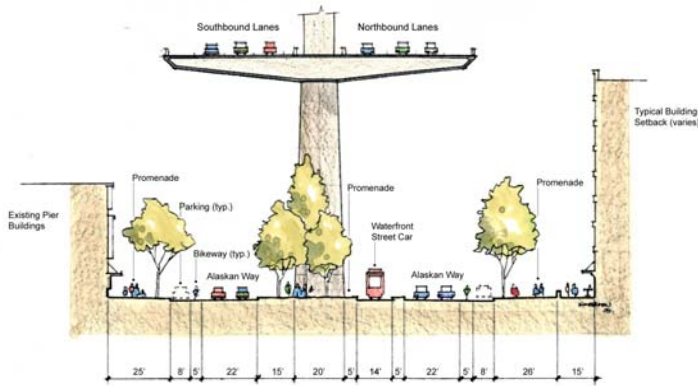
# Mega Project: SR 99 Alaskan Way Viaduct

- Form Follows Funding: Cost controls design alternatives



# Mega Project: SR 99 Alaskan Way Viaduct

## ■ Form Follows Funding



Paul D. Kinderman PE AIA  
Bridge Architecture of the 21<sup>st</sup>  
Century

Western Bridge Engineers Seminar  
2007

 Washington State Department of Transportation



# MegaProject: SR 99 Alaskan Way Viaduct

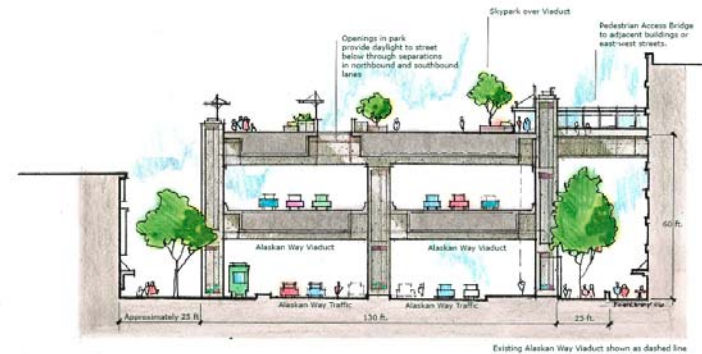
## ■ Form Follows Funding



ALASKAN WAY VIADUCT & SEAWALL REPLACEMENT PROJECT  
Elevated Structure Alternatives  
Looking North viewed from the Central Waterfront.  
Option Seven  
DRAFT  
PRE-DECISIONAL ARTIST'S CONCEPT DRAWING



ALASKAN WAY VIADUCT & SEAWALL REPLACEMENT PROJECT  
Elevated Structure Alternatives  
Looking North viewed from the Central Waterfront.  
Option Eight  
DRAFT  
PRE-DECISIONAL ARTIST'S CONCEPT DRAWING



ALASKAN WAY VIADUCT & SEAWALL REPLACEMENT PROJECT  
Elevated Structure Alternatives  
Looking North viewed from the Central Waterfront.  
Option Nine  
DRAFT  
PRE-DECISIONAL ARTIST'S CONCEPT DRAWING

Paul D. Kinderman PE AIA  
Bridge Architecture of the 21<sup>st</sup>  
Century

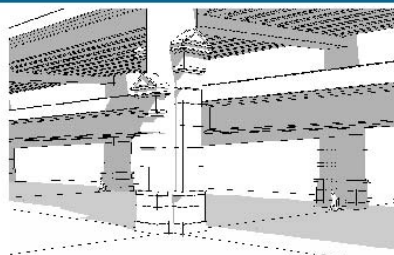
Western Bridge Engineers Seminar  
2007

# Mega Project: SR 99 Alaskan Way Viaduct

## ■ Form Follows Funding

Alaskan Way Viaduct  
Elevated Structure Alternative

Contextual Design Concept:  
Pioneer Square Thematic Zone



Elevated Structure Alternative Bridge Piers.  
Architectural details vary to compliment adjacent historic buildings.

WASHINGTON STATE DEPARTMENT OF TRANSPORTATION  
CITY OF SEATTLE AND THE FEDERAL HIGHWAY ADMINISTRATION



Inspirational image based on historic masonry architectural details.

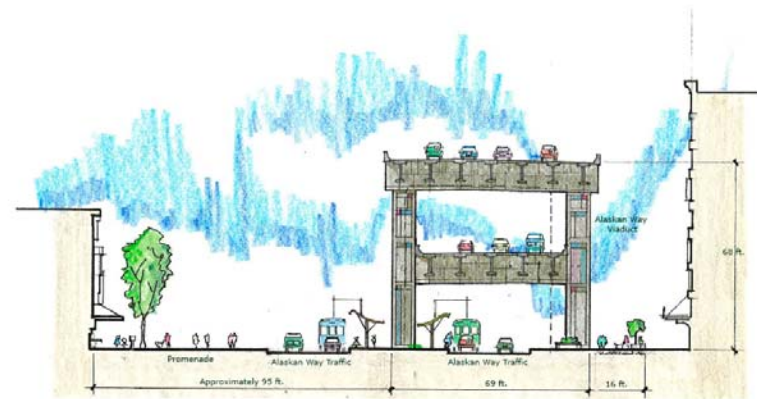
Each of the 'thematic zones' can receive individual architectural details. The designs shown here are based on the historic character of the area.

Pioneer Square is rich with masonry construction dating to the turn of the century. These bridge piers incorporate details from adjacent nineteenth century buildings.

The 150 foot bridge spans allow for each set of piers to have varying architectural treatment, responding to the individual historic areas they traverse.

Noise mitigation methods are the subject of further study. Combinations of quieter pavements, sound-absorbing ceiling panels and vertical noise walls can reduce noise levels between 4 and 25 decibels.

WSDOT  
Urban Corridors Office  
Seattle Washington



ALASKAN WAY VIADUCT & SEAWALL REPLACEMENT PROJECT  
Elevated Structure Alternatives  
Looking North viewed from the Central Waterfront.

Existing Alaskan Way Viaduct shown as dashed line  
DRAFT  
PRE-DECISIONAL ARTIST'S CONCEPT DRAWING

Paul D. Kinderman PE AIA  
Bridge Architecture of the 21<sup>st</sup>  
Century

Western Bridge Engineers Seminar  
2007





# BRIDGE Architecture of the 21<sup>st</sup> Century Summary

Paul Kinderman PE AIA  
State Bridge and Structure Architect  
Washington State Department of Transportation