Sustainability and the Ford Site

The History, Unauthorized and Authorized Prospects

Co Sponsored by AIA St. Paul
Event #10

- David A. Eijadi, FAIA, LEED AP
  - Unauthorized Design

- Raymond Dehn, Assoc. AIA, LEED AP
  - Authorized Design

- Lynn Hinkle, UAW Ford Twin Cities Assembly Plant
  - Green conversion
SCHEDULED TO CLOSE 2009
• Definition:

Sustainability is the ability to meet the needs of the present without compromising the ability of future generations to meet their own needs.
COMMITTEE AND GUEST

• David A. Eijadi, FAIA Chair,
  Unauthorized Design  d.eijadi@twgi.com

• Diane Trout-Oertel, AIA
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  doertel@oertelarchitects.com

• Deborah Rathman, AIA
  AIA Saint Paul Chapter President-Elect
  drathman@dlrgroup.com

• Erin McKiel, Associate AIA
  AIA Saint Paul Chapter Member
  emckiel@bwbr.com

• Lynn Hinkle
  AIA Saint Paul Chapter Guest
  lhinkle@peoplepc.com
Have you heard this one?

“I am an architect and no one knows what I do. They (whoever) don’t appreciate me. They (whoever) don’t understand what I do.”

• Unauthorized Design provides an opportunity to
  – Exercise imaginations outside the bounds of office position or client expectations.
  – Influence the public debate about what to build and how to do it.

• Where there are many – who can they blame?
UNAUTHORIZED DESIGN

AIA Saint Paul
A chapter of the American Institute of Architects

- Sign in 8:30am
- Listen to this 9:00am
- Eat 12:00pm
- Pin-up 3:30pm
- Beer 3:45pm
- The Mayor 4:00pm
- Joie de vivre Whenever
- Clean up Before you go
UNAUTHORIZED DESIGN

• Participants from:
  – Albertsson Hansen Architects
  – Architectural Alliance
  – BWBR Architects
  – Collaborative Design Group
  – DLR Group
  – esg architects
  – Hay Dobbs P.A.
  – Investment Property Services
  – Miller Dunwiddie
  – Smith Group
  – The Weidt Group
  – University of Minnesota
  – Walsh Bishop
  – Weit Design
  – Guest/Public
• INFORMATION TOOLS AND RESOURCES PROVIDED
  - aerial photographs
  - plans of the area surrounding the site
  - a diagrammatic plan of the facility
  - climate information
  - energy calculator to assist with the evaluation of sustainable design solutions

• DISCLAIMER
  Not a competition
  All teams acted independently
## The Energy Story

### SUMMARY OF RENEWABLE ENERGY POTENTIAL

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<td>Potential Wind Turbine Energy</td>
<td>15,614</td>
<td>17%</td>
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<tr>
<td>Potential Solar Hot Water Energy</td>
<td>6,789</td>
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<tr>
<td><strong>Total Potential Renewable Energy</strong></td>
<td>86,436</td>
<td>95%</td>
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</tbody>
</table>

### SITE INFORMATION

<table>
<thead>
<tr>
<th>Information</th>
<th>Value</th>
</tr>
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<tbody>
<tr>
<td>Area of Site (sqft)</td>
<td>6,098,400</td>
</tr>
<tr>
<td>Total built up area (sqft)</td>
<td>2,439,360</td>
</tr>
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</table>

### Building types on site

<table>
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<tr>
<th>Building Type</th>
<th>% of Total</th>
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<th>kWh/sqft</th>
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<tbody>
<tr>
<td>Education</td>
<td>5%</td>
<td>121,968</td>
<td>27</td>
<td>3,274,269</td>
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<tr>
<td>Food Service</td>
<td>5%</td>
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<td>8,224,993</td>
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</tr>
<tr>
<td>Health Care</td>
<td>5%</td>
<td>121,968</td>
<td>59</td>
<td>7,234,848</td>
<td>7,235</td>
</tr>
<tr>
<td>Health Care- Inpatient</td>
<td>10%</td>
<td>243,936</td>
<td>72</td>
<td>17,593,835</td>
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</tr>
<tr>
<td>Lodging</td>
<td>10%</td>
<td>243,936</td>
<td>26</td>
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<td>Retail (Other Than Mall)</td>
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<td>243,936</td>
<td>30</td>
<td>7,306,338</td>
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<td>Religious Worship</td>
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<tr>
<td>Service</td>
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<td>243,936</td>
<td>29</td>
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<tr>
<td>Industrial Manufacturing</td>
<td>5%</td>
<td>121,968</td>
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UNAUTHORIZED DESIGN

• BROAD THEMES

- Connections to the LRT from both Union Depot in downtown Saint Paul and the Hiawatha line just across the river
- Reuse of the historic Albert Kahn skylit industrial building
- A mix of uses on site, including residential, commercial, office, industrial, and even educational
- There were no instances where a team thought that this should be a single use site
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UNAUTHORIZED DESIGN

• Team 1
  – Regional linkages of the site related to regional transportation
  – Firmly connecting the community through the site to the river
UNAUTHORIZED DESIGN

• Team 2
  - Recreational and commercial linkages
  - Combining historic manufacturing and environmentally state of the art industry
• Team 3
  – Regional linkages of the site related to regional transportation
  – Firmly connecting the community through the site to the river
Team 4
- Extending the street grid through the site
- A central mall with a transit hub.
• Team 5
  – Regional level issues recognizing the important rail and recreational linkages through this site.
  – A unique approach to the transportation and the historic Albert Kahn building.
Team 6

- Connecting the site to the context of the two downtowns and the airport,
- A novel understanding of the scale of the Ford plant site
Team 7

- Commercial, retail and marketplace uses wrapped them in a green skin.
- Preserving the northwestern edge of the existing facility
Team 8

- Stated its priorities of Jobs, Connection to Community, Multi-purpose, Residential Use and Eco-sensitive response
Redevelopment of Ford Motor Company Site

City of Saint Paul

Ford Site Planning Task Force

Carole Faricy, Co-Chair
William Klein, Co-Chair
Peter Armstrong
Shawn Bartsh
James Bricher
Richard Broderick
Ronnie Brooks
Anthony Desnick
David Drach
Terri Dooher Fleming
Charles Hathaway
Deborah Karasov
Angela Kline
Scott Malcolm
Gary Marx
Lance Neckar
Dennis Rosemark
Matthew Schuerger
Stuart Simek
Morgan Tamsky
Bruce Stephanie Warne
Ellen Watters
Pamela Wheelock
Dave Sellergren

EDAW | AECOM

Close Landscape Architecture
Elness Swenson Graham Architects
Meyer, Mohaddes Associates, Inc.
URS
Dewar & Associates, Inc.
Vision Statement

“The redeveloped Ford Site will balance economic, social and environmental sustainability in a way that builds on the qualities and characteristics of the unique Highland Park neighborhood and River Valley Corridor in which it sits, while advancing the City’s economic wealth and community goals, resulting in forward-thinking 21st Century development.”
Proposed Working Goal Categories and Fundamental Elements

► Character and Built Form
► Community Amenities and Open Space Connectivity
► Land Use
► Transportation and Infrastructure Connectivity
► Economic Viability
► Sustainability
► Policy
Proposed Working Goal Categories and Fundamental Elements

- **Character and Built Form**
  - Integration with existing block pattern and neighborhood fabric and scale
  - Respond to MRV Overlay Building Heights
Proposed Working Goal Categories and Fundamental Elements

► Community Amenities and Open Space Connectivity
  » Hierarchy of visual and recreational connections to MRV and throughout the site
  » Walkability and visual interest of pedestrian system
  » Range of recreational opportunities; active, passive, and educational
Proposed Working Goal Categories and Fundamental Elements

- **Land Use**
  - Residential; Full range of housing options
  - Mix of uses for live, work, shop, and play opportunities
  - Augment Highland Park retail mix
Proposed Working Goal Categories and Fundamental Elements

► Transport and Infrastructure Connectivity
  » Traffic mitigation, calming and enhancement plan
  » Multi-modal transportation options
  » Shared structured parking management strategy
Proposed Working Goal Categories and Fundamental Elements

► Economic Viability
  » Creation of a minimum of 2,000 well paying jobs
  » City tax base stability
  » Fair market value to Ford
  » Realistic developer market opportunities
Proposed Working Goal Categories and Fundamental Elements

► Sustainability
  » Storm water management, quality, and recharge
  » Use of indigenous vegetation
  » Building and site LEED certification
  » Explore use of wind, solar, earth, and hydropower energy sources
  » National model for integrating environmental sustainability
Proposed Working Goal Categories and Fundamental Elements

- **Policy**
  - Conformance with District Neighborhood Plan, City Comp Plan, MRV Plan
  - Establish flexible yet consistent zoning categories and Framework Plan that support the Vision
  - Recognize Ford and Labor’s history and legacy of the site; i.e. foundation, museum, building reuse, and naming opportunities
• Scenario #1

Draft Major Development
Scenario 1:
AUAR Baseline – Primary Reuse for Industry
• Scenario #2

Draft Major Development Scenario 2: Mixed Use - Light Industrial/Flex Tech
• Scenario #3

Draft Major Development
Scenario 3: Mixed Use – Office/Industrial
• Scenario #4

Draft Major Development
Scenario 4:
Mixed-Use
Urban Village
Scenario #5

Draft Major Development Scenario 5: 
MixedUse - High Density Urban Transit Village
# AUTHORIZED DESIGN

## Energy Modeling

**Energy Generation and Consumption Conceptual Design Tool**

**SUMMARY OF RENEWABLE ENERGY POTENTIAL**

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**Area of Site:** 6,098,400 soft

**Peak MW hrs/year MWH**

- Hydro Generation: 18
- Total: 8760
- Total: 157,680

**SITE USAGE INFORMATION**

- Total built up area: 2,439,360 soft
- 140 Acres
- 43,560 SFI/Acres
- 40% of Site

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**PHOTOVOLTAICS: ENERGY GENERATION POTENTIAL**

- 25% of Site
Phase Two:
Analysis of 5 Scenarios – Fall 2007
Evaluation of each development scenario using fiscal analysis and an Alternative Urban Areawide Review (AUAR).

- energy efficiency
- alternative energy systems
- stormwater management and water quality treatment
- reduced emissions
- multi-model transportation
- natural open space systems
- other factors to be identified

http://www.stpaul.gov/depts/ped/fordsite/
The next generation sustainable development of the Ford Site:

- Include family sustaining manufacturing jobs
- Use non-carbon energy
- Housing and retail in a full range of affordability
- Public green space bounded by the Mississippi River National Parks Corridor
Ford Site Green Conversion

- Serve as a model of sustainable development for future generations.

- In the near future carbon mitigation and carbon offset development will be a critical asset for a community and far more attractive than developments shaped solely by current market standards.

- The Ford Site is an opportunity to create redevelopment standards for the future.
• Multi-modal transit options that use the existing rail corridor:
  – Adding mass-transit capacity and retain rail freight support for green manufacturing.
  – Thru-site mass-transit with regional connectivity, reducing on-site need for personal transit increasing on-site walk/bike/ride share and common green space.
  – Safe intersections with universal access for all people to live/work and shop in the community and using public transportation.
  – Design embedded and shared parking with plug-in and ride share incentives.
• On-site non-carbon energy to exceed the mixed use demand of the site by:

  – Reconnecting the 18MW hydro-electric plant to the site using municipalization a strategy similar to C-BED public ownership, or creation of a not-for-profit entity, such as, St Paul District Heating.

  – Developing the Ford –Site sand tunnels ground source heating capacity.
– Designing and constructing buildings to maximize energy efficiency and use of renewable energy sources including solar Thermal and PV.

– Generating heat and electrical power from on-site methane as well as fumes to fuel processes as part of some green manufacturing processes.

– Expanding the current on-site waste treatment.
GREEN CONVERSION

• Support sustainable built systems by:
  
  – Residential/Research/Retail densities that maximizes energy efficiency and use renewable energy
  
  – Retaining the economic diversity of housing with a full range of sustainable housing options
  
  – Using LEED ND standards, employing local firms, and union contractors
  
  – Design buildings for maximum use of the Sun for energy gardens and recreation and roofs for multiple green uses including prairie grass carbon sinks
  
  – Protecting the river corridor’s natural visual and environmental character
GREEN CONVERSION

• Support family supporting jobs by:

  – Ensuring at least 2,000 on-site jobs for workers with a range of skills that provide income for family health care, transportation, education and energy in 40 hours worked.

  – Providing on-site child and elder care for residents and workers.

  – Marketing the site (by state and city) for green manufacturing of wind turbines, mass transit vehicles or green building equipment.

  – Re-connecting the hydro to on-site eco-manufacturing with incentives for lowest carbon parts, processes and products.

  – Working with on-site unions and businesses to use 4/10 workweeks continuing UAW 879’s negotiated reduced traffic/emissions program.
• Support development that fosters community and re-localization by:
  – Developing center for wellness, arts and skill-sharing activities.
  – Design on-site self-reliance, including community gardens and streets that encourage walking and biking to work, shop and recreate.
  – Developing on-site adult learning and building trades apprenticeship training center for sustainable building and renewable energy equipment in the retained MNSCU facility.
  – Jobs aligned with regional markets and that allow Workers to live and shop in the community.
  – Developing capacity for “neighborhood vehicle” use.
• Carbon mitigation will re-shape the market with a carbon trade/tax.
• Redevelopment of the Ford site as the most marketable option by:
  – Developing and using “green bonding” for the low carbon development including housing, manufacturing, infrastructure and transit.
  – Engaging the growing green capital market to help shape needed private investment.
  – Use publicly driven non-profit on-site utilities - best public return on development investment and sustainable utility rates.
  – Use the City or Regional entities as the Prime Developer
“Humankind has not woven the web of life. We are but one thread within it. Whatever we do to the web, we do to ourselves. All things are bound together. All things are connected.”

-Chief Seattle