



Omaha Public Power District

Your Energy Partner



OPPD's goals for site

- All functions consolidated in one building with expansion
- Equivalent storage and parking
- LEED certification
- Include state of the art renewable energy features

LEGEND

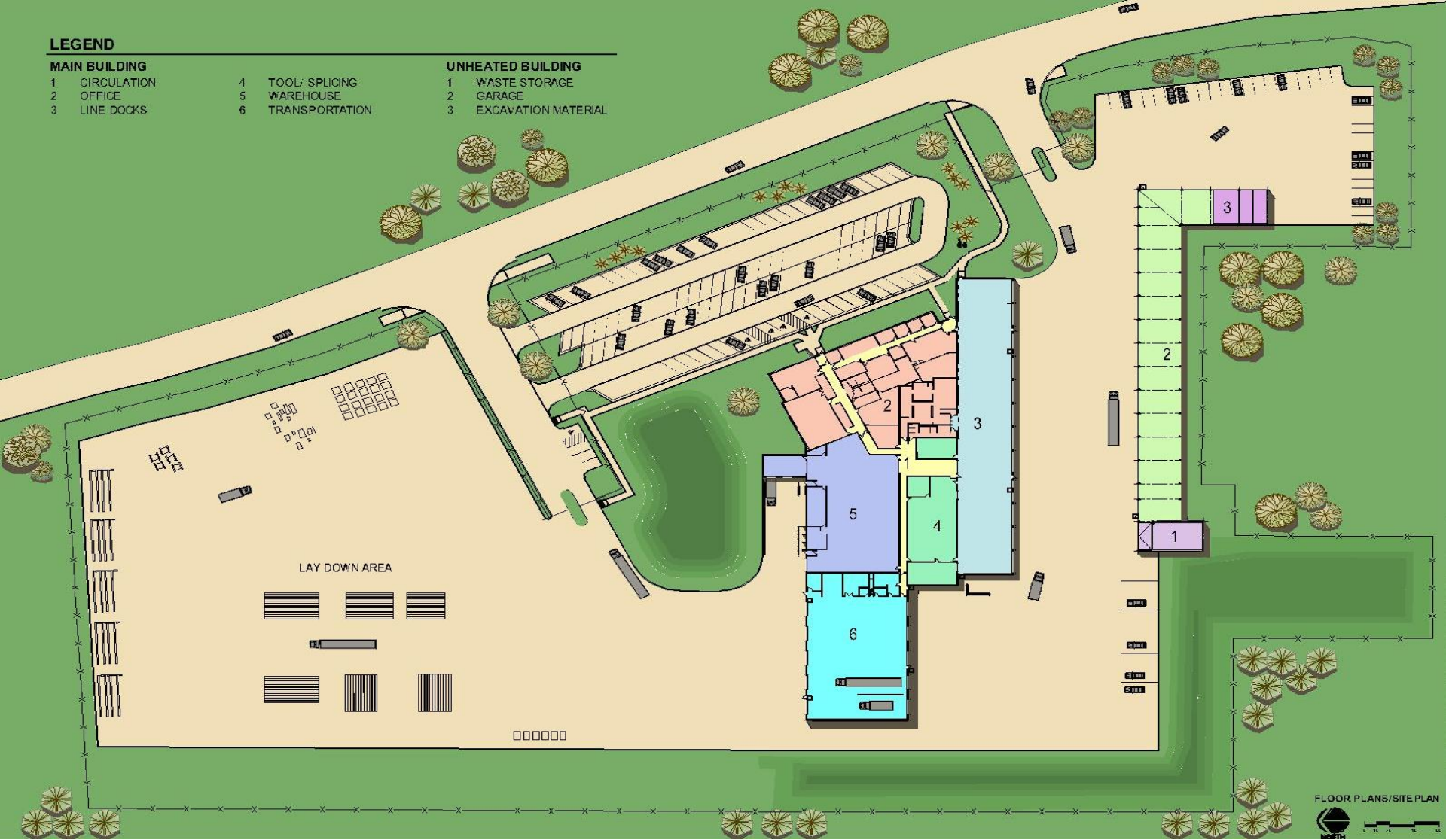
MAIN BUILDING

- 1 CIRCULATION
- 2 OFFICE
- 3 LINE DOCKS

- 4 TOOL/SPILING
- 5 WAREHOUSE
- 6 TRANSPORTATION

UNHEATED BUILDING

- 1 WASTE STORAGE
- 2 GARAGE
- 3 EXCAVATION MATERIAL



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OPPD additions

- 10,921 square feet
- 7-1/2 ton bridge cranes
- Storeroom racks
- Upgraded perimeter fence
- Barrier gates
- Green features



LEED - Leadership in Energy & Environmental Design

- A building certification program that provides standards for environmentally sustainable construction.
- OPPD goal – get the highest certification possible using standard building techniques
- Concentrates on improving performance in five key areas of environment and human health
 - Sustainable site development
 - Water efficiency
 - Energy and Atmosphere
 - Materials and Resources
 - Indoor environmental quality



Sustainable Sites

- Bicycle Storage and Changing Room
- Low Emitting and Fuel Efficient Vehicles
- Stormwater design
 - Quantity control
 - Quality control
 - Pervious Paving
 - Permeable Pavers
 - Detention ponds
- Heat Island Effect
 - Portland cement concrete pavement
 - White Thermoplastic polyolefin (**TPO**) single-ply roofing



Stormwater detention pond (one of two)

White (TPO) roof





Water Efficiency

- Water Efficient Landscaping
 - No irrigation
- Water use reduction inside building
 - Low flow faucets and toilets



Energy and Atmosphere

- Fundamental and enhanced commissioning
- Whole Building Energy Simulation
- Refrigeration management
- Measurement and Verification
- Green Power 35% of Building's electricity
 - Roof Mounted photovoltaic (44.8kW)
 - Laminate Panels (10.8kW)
 - Photovoltaic tracker (2.1kW)
 - Windspire (1.2kW)



Water-to-water heat pumps, solar tank



Solar thermal system – 10 panels x 3,850 Btuh each



Photovoltaic panels, Sharp polycrystalline
100 summer position, 100 winter position
224 watts each panel
Total 44.8kW



Photovoltaic panels, Uni-Solar laminate ,
136 watts ,80 panels
Total 10.8kW



Photovoltaic tracker:
12 Andalay panels
175 watts each
Total 2.1kW



Windspire – 1.2 kW



All exterior
lighting is LED



Materials and Resources

- Construction Waste Management
 - Divert 75% from landfill
- Recycled content
 - 10% by cost
- Regional materials
 - 20% by cost within 500 miles
- Certified wood
 - 50% by cost certified by Forest Stewardship Council



Indoor Environmental Quality

- Outdoor air delivery monitoring
- Increased Ventilation
- Construction IAQ Plan
- Low emitting material
 - Eliminated floor coverings where possible
 - Corridors, Multipurpose, Locker rooms, Transportation office & Storeroom office
- Controllability of systems
 - Operable windows
- Daylight and views



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Photo courtesy Tom Kessler

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QUESTIONS?