“Qualitative” Aspects of Master Planning

reigniting the vision

E. Crumpley September, 2009

Dr. Wilson's Heritage

a series of planned
experiences resulting in a:

sense of order;
sense of place;
sense of community;
sense of identity

……"the kind of creative thinking needed for the lab to succeed could only take place in a setting of environmental and architectural beauty"…..

4. Internal Circulation

a. Major Traffic Generators - The Central Laboratory and surrounding buildings (Linac, Booster, Transfer Gallery and Cross Gallery) will house the majority of the employees. It is estimated that up to 1500 employees could be present permanently. At times of conferences an additional 600 to 900 people may use the auditorium and meeting rooms. In general for smaller meetings, 20 to 100 visitors may congregate at all times in this area. At present, a parking lot for 740 cars has been designed as the first stage of development of parking for this group of buildings.

The NAL Village will generate considerable traffic, especially during the summer months when the majority of the experimentors will be present. A fluctuating population from a few hundred could swell to 700 to 800 people at times. The permanent population will most likely be less than 300 people.

The Industrial Areas will include shops, warehouses, and motor pool. At the outset, a permanent population of 150 to 200 persons is estimated in this area. Truck traffic will be destined to it and originate from it, using mostly the Batavia Road entrance. Internal truck deliveries as well as the vehicles of the motor pool will also originate here.

The Experimental Areas will generate the least traffic. Although a small permanent population will be present, at certain times during experiments NAL staff and experimentors are expected to increase the traffic volume for short periods.

The Meson, Muon and Neutrino Laboratories along Road A will generate sporadic traffic. Morning, noon and evening peaks may be replaced temporarily by odd-hour peaks depending on the timing of experiments--or even emergencies. A similar pattern will probably occur at the Proton Laboratory.

b. Road Capacities - Based on surveys conducted at NAL on home locations of NAL employees and the ultimate highway network, it is predicted that an even distribution of employee traffic between the Main Entrance Road, Kautz Road and Batavia Road will take place.

The major roads throughout have been designed as good institutional roads with 12 foot travel lanes. Traffic projections based on generators, expected frequency of trips and home locations showed all roads below capacity at peak hours. The maximum estimate of 420 cars at the Batavia Road Entrance is less than 50% of the 900 plus basic maximum capacity for roads of this type and size.

c. Types of Roads- Major roads connecting centers of activities were designed for two lanes, with 24 foot pavement and 3 foot shoulders on each side.

The Main Entrance Road has been planned as a separated roadway with one lane in each direction. These lanes will have 14 feet of pavement and 3 foot shoulders. The same cross section is used in the divided road in the parking lot. Portions of pre-NAL Wilson and Batavia Roads are incorporated in the major road system although the pavement width is narrower than that in the newly designed roads.

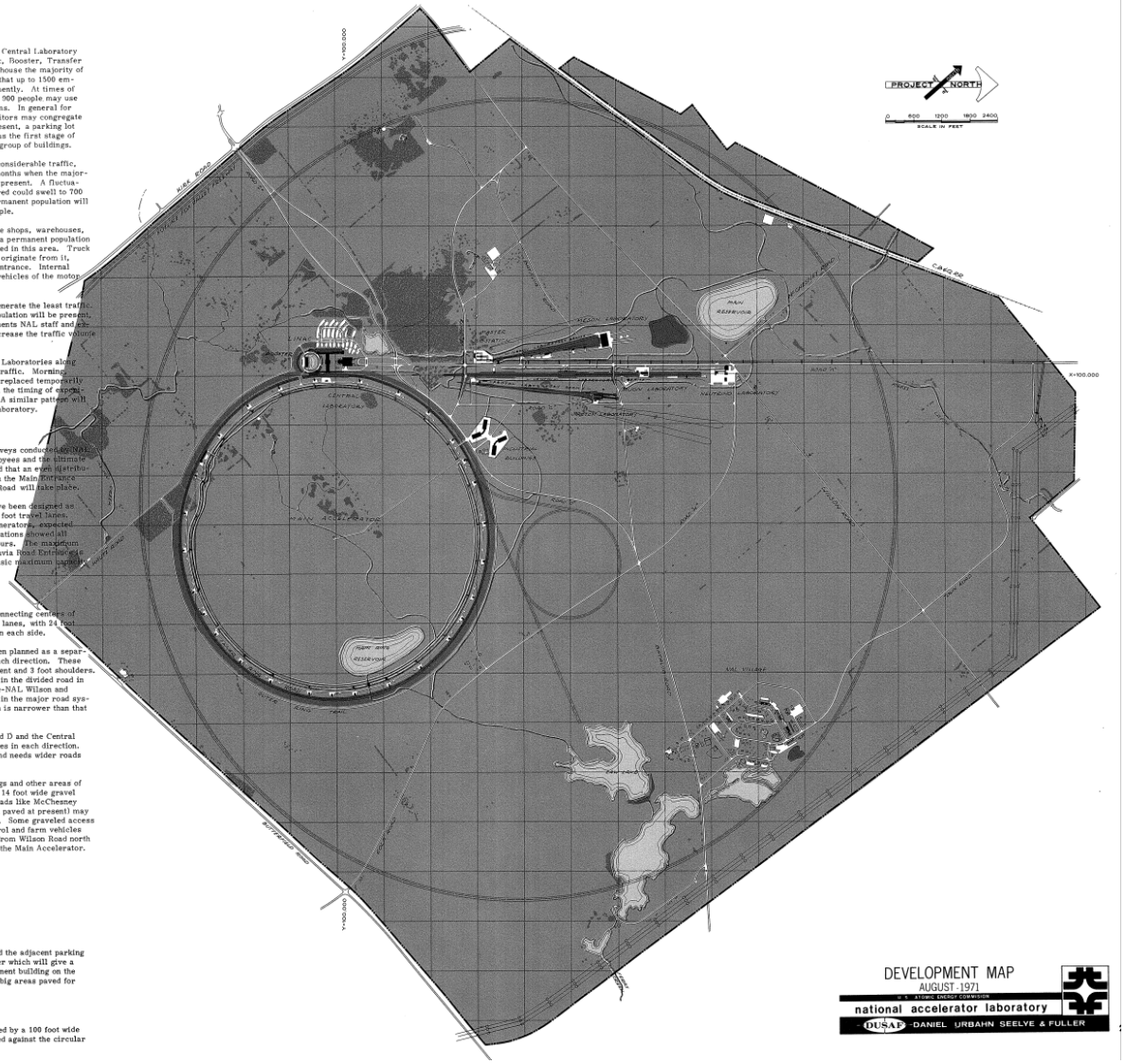
Roads A-1 and A-2 between Road D and the Central Laboratory Building are two lanes in each direction. This area is the hub of traffic and needs wider roads to assure a smooth traffic flow.

Access roads to service buildings and other areas of infrequent uses are designed as 14 foot wide gravel roads. Some of the old farm roads like McChesney and possibly Eola (although still paved at present) may ultimately become gravel roads. Some graveled access trails to be used by the site patrol and farm vehicles are along the transformer line from Wilson Road north and on the outside perimeter of the Main Accelerator.

5. Landscaping

a. The Central Laboratory Area and the adjacent parking lot will be landscaped in a manner which will give a proper setting to the most prominent building on the site and "soften" the severity of big areas paved for parking.

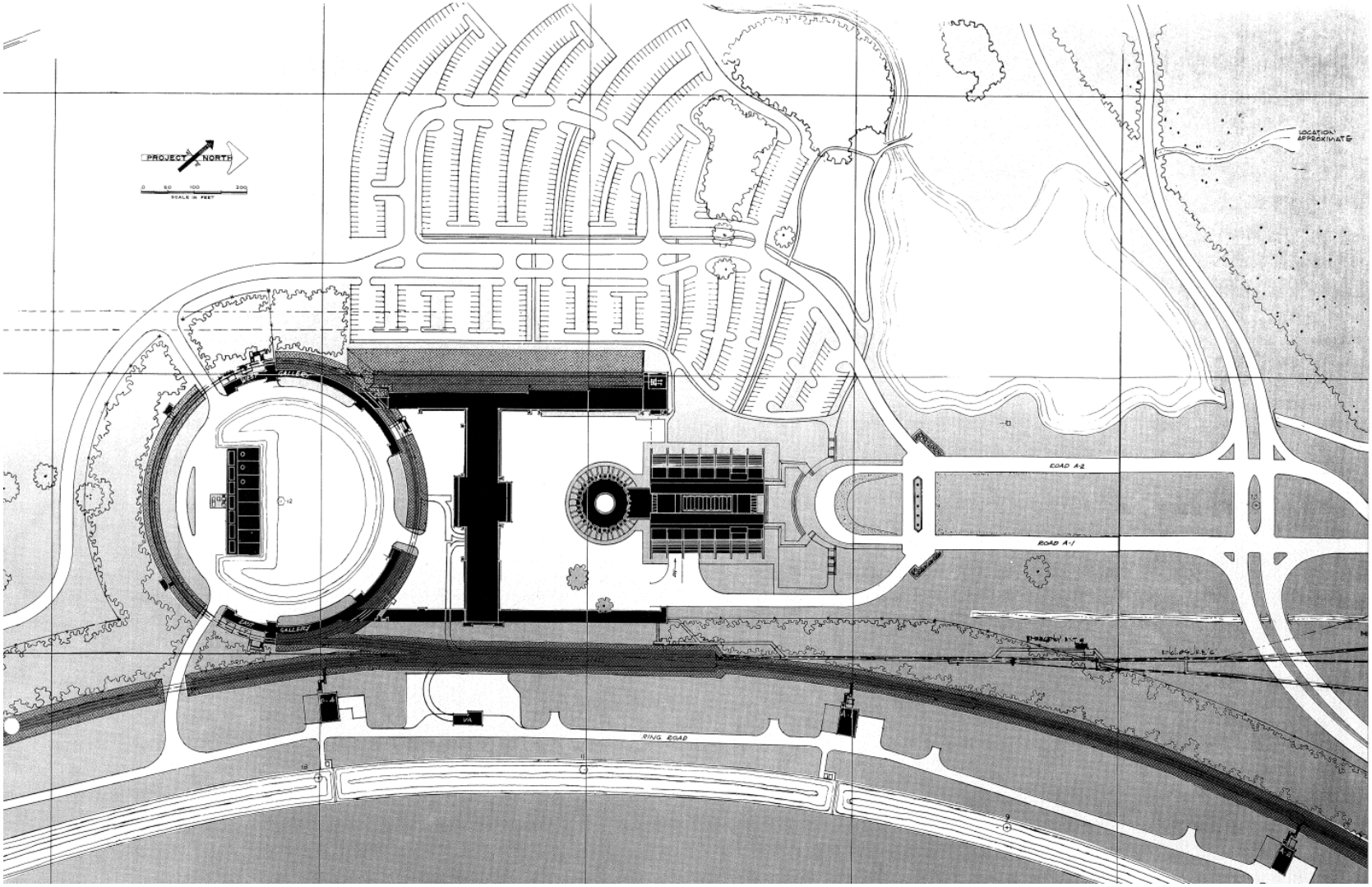
b. The Main Accelerator is encircled by a 100 foot wide strip of evergreen planting banked against the circular berm.



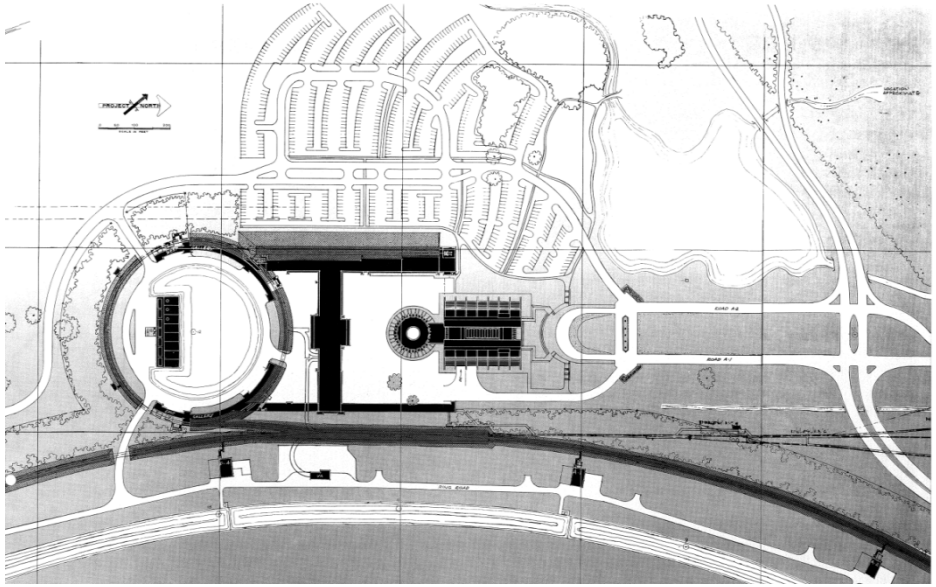
our original Master Plan……..

"The Green Book"

note the narrative on left



detail of Footprint Area…….. a conceptual guide, not a final plan



variations from the master plan over time,

but the underlying concepts remain intact
-Swan Lake enhanced by "causeway" reflecting ponds
- strong axial layout
- parking area to west, but now condensed

procession of entry

as one passes through the sculpture, Wilson Hall is immediately identified as the central focus of the lab

"Broken Symmetry"
@Pine Street entrance

Acqua Alle Funi

thoughtful composition

at this point, Wilson Hall is no longer visible, the sculpture is central in the driver's view, framed by woods

controlled vistas

as one emerges from the woods, Wilson Hall appears on the right, reflected in Swan Lake

continuing woods on the left guide your attention to Wilson Hall

considered placement of added features

through careful siting, Wilson Hall rises above the LEC as a reminder of the true center of activity for the lab

the view from “40,000 feet”

roads, buildings, and berms define the underlying beamline patterns

Dr. Wilson was always concerned with the organized appearance of the lab from high above

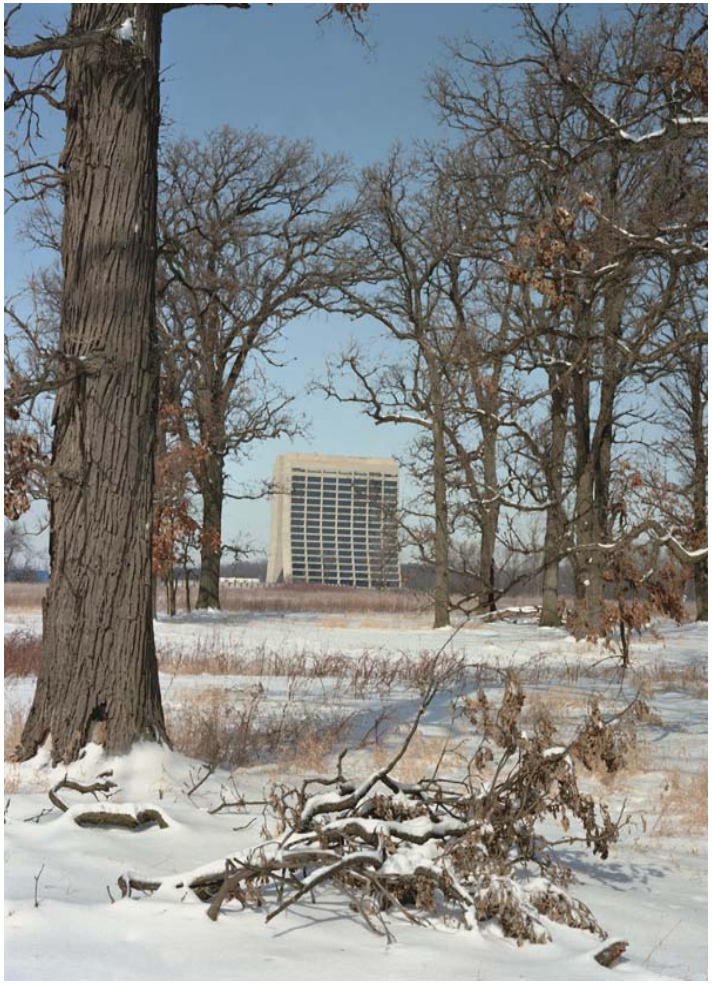
strong geometric lines

use of axial line through footprint area maintains order in buildings, roads, and site elements

the axial line is extended north along the Pi-pole high voltage line

this establishes “lab north” and is the basis for the lab survey grid

it was later used to locate and orient the antiproton ring to the south



Wilson Hall is visible from almost all points on site

common architectural vocabulary includes random board finish concrete

site-wide unifying elements

visual recall

is utilized here in the precast concrete panels

and more recently in the logarithmic spirals

neighborhood identification

is provided by use of architectural vocabulary unique to various functional areas

Main Ring service buildings

"alphabet blocks"

originally featured a variety of wall colors, contrasting overhead doors with graphic circles, and multi-colored substations & air towers

Antiproton ring

“Mayan”

sloped concrete walls with
random board finish

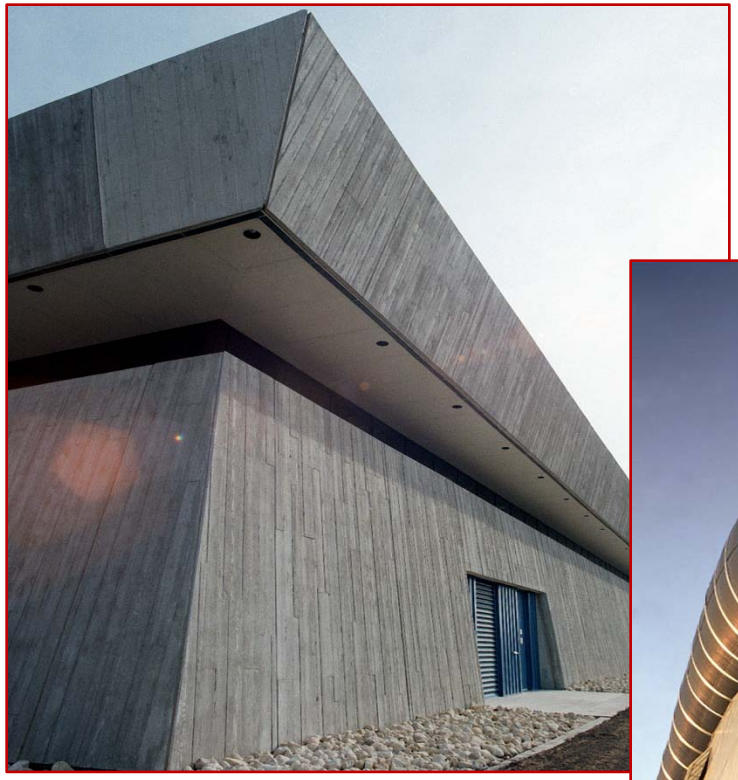
Industrial area

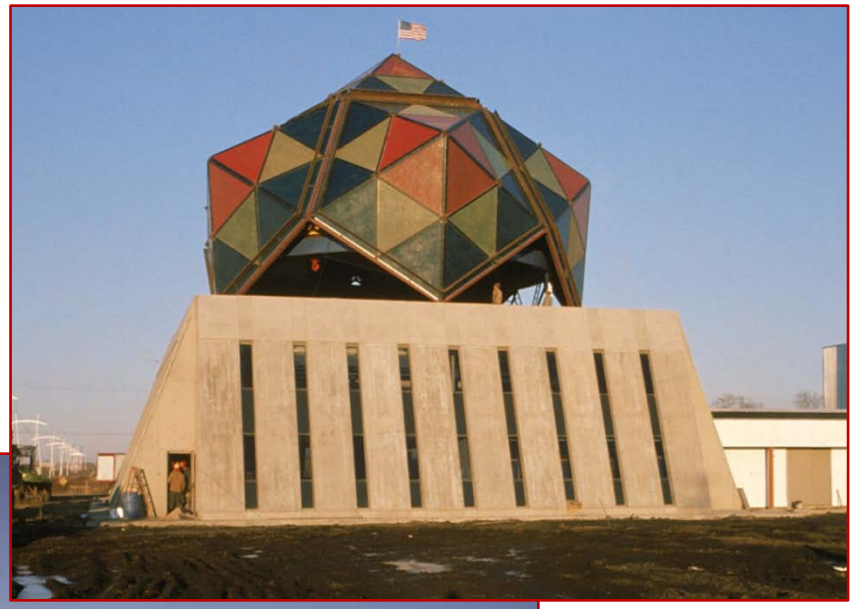
“utilitarian”

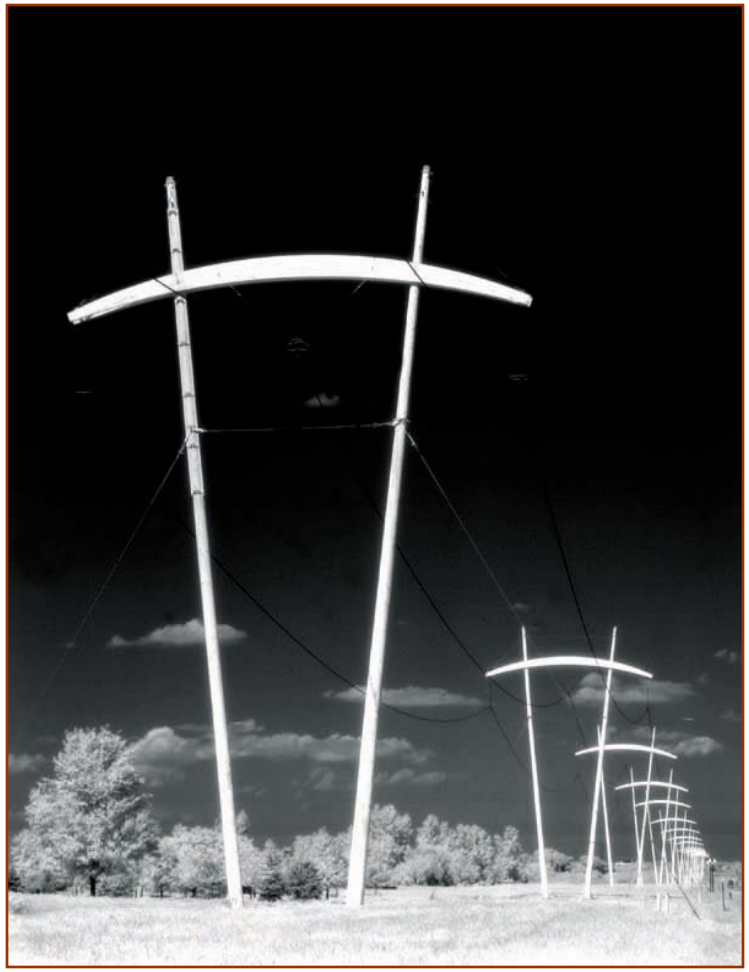
Concrete wainscoting, strip windows and blue metal siding with orange doors and blue graphics

ends of fixed-target beamlines

were identified by creative, innovative, and fun structures







utilitarian structures

were also designed as sculptural elements

….”there is beauty to be found and expressed in the scientific apparatuses themselves and in their supporting utilities”….

Infrastructure elements were incorporated into the building composition

sculptural aspects of buildings

concepts lost over time

the Main Ring service buildings & substations have been homogenized in the name of maintenance

NuMI, Main Injector, MiniBooNE (& MR)

service buildings lack identification of function

a final quote from Dr. Wilson:

“a utopian place where physicists coming from all parts of the country – and from all countries – would be doing their creative thing in an ambiance of well-functioning and yet beautiful instruments, structures, and surroundings that would reflect the aesthetic magnificence of their discoveries and theories.”