**Tesla – The Man Who Electrified The World**

I: Entrance

As visitors approach the entrance they can see flashes of electricity and Tesla coils on either side. Stepping inside, they step into a large Faraday cage tunnel. A row of three Tesla coils, each approximately nine feet tall, is on either side. Electricity is visible in its rawest form, arcing and hissing and sizzling over their heads. The smell of ozone is in the air. Behind the coils lining the outer walls of the enclosure are backlit floor-to-ceiling graphic panels with larger-than-life images of Tesla in his labs, including the classic double-exposure of Tesla with high voltage arcing around him.

II: Early years

From the entrance the visitors step into an environment depicting a typical Belgrade street scene circa 1860-1870. The floor is a cobblestone street, the exhibit pieces three-dimensional building facades. Ambient period sounds play in the background. The windows of the buildings house backlit transparencies of the period and information about Tesla’s youth in Serbia and education.

* Interactive – *Visualize Like Tesla* – A touch screen holds a series of iconic images broken down into component parts; visitors are encouraged to derive the finished image from them.

III: Coming to America

A small but important section of the exhibit, this area tells of Tesla’s arrival in the U.S.A. and his great love for his adopted country, including his statement upon receiving his American citizenship on 30 July 1891 that “he valued his citizenship more than any scientific honors he had acquired.” Thematic elements will include period images of immigrants arriving at Ellis Island and New York City.

IV: Edison

Another small but important part of the exhibit, this area will be themed as a reproduction of Thomas Edison’s laboratory of the period. Comparisons will be drawn between Edison and Tesla – Tesla being a more modern inventor who combined technical education and applied theory in his inventions, as opposed to Edison who was more of the classic tinkerer. Highlighted will be Tesla’s improvements to Edison’s motor designs, as well as the famous $50,000 bet and subsequent feud between the two men.

* Static Display – *Motors and Generators* – Side by side displays of replicas of Edison’s original motors and generators and Tesla’s improved versions, noting the improvements.
* Interactive – *Did You Know* – Make the connections between Edison’s inventions and Tesla’s improvements on them.

V: Middle Years – New York and Colorado Springs

Note: areas V and VI below can be grouped/themed as one large area, the common theme being of course Tesla’s Labs, as these labs will depict the peak of Tesla’s experimentation and invention.

The theme will be Tesla’s labs, first in New York City and later in Colorado Springs, based on existing photographic images. The exhibit elements will be themed as parts of the labs; larger-than-life images of the labs will be projected on the walls to increase visual impact. Ambient audio will be that of a period working shop; machine tools and electric arcs. Exhibit graphics and text will tell the story of this period:

* Tesla Electric Light & Manufacturing
  + Fired by investors for wanting to develop AC
* Tesla Electric Company
  + AC theory development
* Meeting and association with George Westinghouse
  + Pittsburgh AC power grid
* Tesla Coil and Wireless Energy Transmission
* South Fifth Ave. Labs established
* Mother’s death and his subsequent illness
* Lights World’s Columbian Exhibition in Chicago 1893
* “War of the Currents” and renegotiation of Westinghouse patents
* J.P. Morgan
* Friendship with Mark Twain and other luminaries of the period
* X-ray experimentation and subsequent particle beam theories
* Radio experimentation
* Colorado Springs Labs established
* High voltage wireless power transmission experimentation

Static Display – *Cutaway DC brush motor and AC induction motor* – Cutaway models of a DC brush motor and an AC induction motor showing the differences and improvements between the two.

Static Display – *Columbian Exhibition and Tesla’s lighting system* – A scale model of the 1893 World’s Columbian Exhibition in Chicago showing the power generation and distribution system used to light the Exhibition.

Interactive – *Arc Light* - Simple interactive showing how an arc light works.

Interactive – *Rotating Magnetic Field* – Hand-cranked mechanical interactive depicting the rotating magnetic field based on Tesla’s patent drawings

Interactive – *Running A Power Grid* – How to ramp up and synchronize 60 cycle AC generators and add capacity to an AC power grid without causing damage, either by wrong frequency or phase.

Interactive – *Tune A Tesla Coil* – Multiple Tesla coils are on display. Some are different sizes, some are the same size but with different characteristics (coil windings, collectors, etc…). The visitors are given controls to tune the resonant frequency of their coil, with the point being that the largest sparks come not from the largest coil but the post efficiently tuned one. Video & graphic tells visitors what they’re seeing and why

Interactive – *Wireless Transmission* – Visitors light a fluorescent lamp wirelessly with a Tesla Coil.

Interactive – *Teleautomaton* – A visitor-controllable replica of Tesla’s Teleautomaton radio controlled boat.

Interactive – *Patent Kiosk* – searchable database of Tesla patents

Video – High Voltage Wireless Power Transmission concepts and fundamentals, including demonstration.

IV: Wardenclyffe

The theme will be Tesla’s final labs at Wardenclyffe. The ambience will be similar to that of the NYC/Colorado Springs labs as mentioned above.

* Wireless transmission of electricity – experiments with Ionosphere
* Falling out with Morgan and termination of funding
* Invents Tesla Turbine
* Invents Mechanical Oscillator – Tesla’s Oscillator
* Receives Edison Medal
* Radar experimentation
* Nobel Prize rumors & rejection of shared prize w/Edison
* Experimentation in Telegeologics – method of determining locations of mineral resources through their resonant frequency

Static Display – *Tesla In His Lab*

Static Display – *Edison Medal*

Interactive – *Wardenclyffe* – Scale model of Wardenclyffe buildings and tower as shown in artist’s conception of the finished tower; visitors can run the tower.

Interactive – *Dueling Turbines* – Visitors have control of position of air nozzle and air pressure for two identical turbines, except one is standard and one bladeless. Given identical conditions which will spin faster? Why?

Interactive – *Earthquake Machine* – Visitor stands on fluid-damped platform, activates oscillator, feels vibration increase. Text explains standing waves and resonant frequencies, Tesla’s claim to be able to break the Earth.

Interactive – *Early Radar* – to be developed

Interactive – *Telegeologics* – visitors determine locations of objects in a liquid filled tank with vibrations (similar to ultrasonic imaging)

V: Later Years and Death

* Last patent – VTOL biplane
* Residency @ Hotel Clinton and Westinghouse stipend
* Pigeons
* 7 Jan 1943 – Death and seizure of property and records by FBI

Static Display – *The White Pigeon of His Affections*

Interactive – *VTOL Biplane* – working model of Tesla VTOL biplane concept in wind tunnel; visitors can “fly” it.

VI: Tesla Theater

Small (sufficient to hold school group) theater w/benches & projector, short (5-10 min.) video about Tesla’s more theoretical concepts (and how they may be being used today)

* The Electric Submarine – Tesla’s concept vs. today’s reality
* Teleforce and charged particle beam pellet gun
* Death Ray and ionized particle beam gun
* Earthquake Machine
* Force Field
* Ion-propelled Aircraft
* Thought Camera

Static Display – *Electric Submarine* - Cutaway modern electric sub depicting Tesla’s innovations still in use.

Static Display – *Tesla Coil Music* – At the end of the film two Tesla coils on the stage are illuminatedand a short musical piece is played using the Tesla coils as the audio transducers.

Interactive – *Earthquake Machine* – Visitor stands on fluid-damped platform, activates oscillator, feels vibration increase. Text explains standing waves and resonant frequencies, Tesla’s claim to be able to break the Earth.

Interactive – *Ion Propulsion* – small ion motor and radioscope to demonstrate ion thrust.