

bering strait tunnel.

light bridge.

**new age 'babylon tower'**

as a globalization symbol

## **Global transport network**

*Railway is like yeast which makes a cultural fermentation among people. Even if it meets absolutely wild people on its way it will raise them on necessary work level.*

*S.J Vitte 1890  
Chairman of Council of Ministers of Russian Empir.*

### **Transport infrastructure connecting the continents**

Continent junction and world connection is a global human step to balance, stability and harmony. Peace in the World can be expressed by one word. Words “Peace” and “World” spells by one word in Russian. Creation of one global overland transport network connecting 4 continents is not a fantasy. It is a today’s world necessity. Such projects consolidate new world foundations and make a base for new ideology to connect people activity in idea’s realization which will benefit not only to individual country but to humanity in whole.

### **Globalization as a joining of efforts to humanity survival**

Project globality is not only in making overland transport network throw Bering Strait but in overland connection between 4 continents. It will give people new abilities to learn the world, to develop new territories and to broad one’s world-view. All these inaugurate “new human” era without ethnic and cultural prejudices.

### **Connection and creation**

Bering Strait connection is the main thing in the global project of world connection. Its mission is to become the key link of great, laborious and long-term work. Undoubtedly, project will lead to trade and political consolidation, war control, cultural values exchange. These global human missions are directed on survival and self-preservation.

# Not touching the ground

## Topos

**Climate:** Bering Strait classified as the Antarctic, temperature range from  $-20^{\circ}\text{C}$  ~ till  $-50^{\circ}\text{C}$  in Winter. Arctic wind velocity reaches more than 40 m per second. Polar day, polar night lasting nearly half a year, ice drift, icebergs, strong breeze and fog fronts signature this climatic zone. Biosphere: unique geographical location on junction of 2 continents and 2 oceans makes Bering Strait Area a migratory tunnel and junction of land and sea organisms' ways from different parts of the World, and breeding ground for cold-resistant flora and fauna kinds. Very picturesque sea bazaar numbers nearly 3 millions animal units. Sea mammal fauna is rather various. Many kinds of pinnipeds (walruses and seals) make rookeries in island's water area. Island's vegetation is primary grassy: sedge-cotton grass with pillow-shaped subshrubs and moss. Significant to note that topsoil is sensible, vulnerable and requires careful, tactful and controlled attitude. It is important to save and maintain existing ecosystem, and minimize damage while building and operation.

**Ethnology:** Local inhabitants of both islands origin from the same tribe. Currently only on Kruzenshtern island there is Eskimo settlement. It is important to save culture and mode of authentic settlements. It is reasonable to give up the islands as far as there is no visible advantage to use them in building. Constructed tunnel and Peace Park should become high-performance, spontaneous linked structure. Connect but not destroy and harm environment. As though almost life activity processes of modern human harm ecology, building and operation must minimize this damage. Tunnel and Park become most power efficient, ecological and saving buildings. They should set an example for all World.

## Ecology and energy

Tunnel and park building and operation require powerful energy supply. Complex should be energy-independent and constructively isolated from surroundings. The presence of zoom atrium area inside Park will apply to make half-closed ecosystem – ever green oasis among the Arctic ice.

Artificial ecosystem will reprocess carbonic acid, generate oxygen, and reprocess biological wastes. Space ventilation will be realized at the expense of atrium. Solid wastes will be removed and reprocessed on the continent.

Environmental and climate conditions make possible using wind generators to produce electricity. Peace Park should be integrated with small power station on basis of wind turbines. It is the most environmental safety way of electricity production.

# Geometry the Queen of Science

## Location

For rational draft on funds while building and islands immunity it is supposed to link continents in shortest path. The tracing we've got is further north than islands and bisecting point of a segment is on the line of date changing and the board of western & eastern hemispheres. It is that very point where we propose building of Peace Park Complex.

## Why the tunnel?

### ***Bellow but not above***

There are two real ways of physical continent connection at the moment - by bridge or by tunnel. Taking into account area geo-climatic conditions bridge connection variant has a number of disadvantages. Firstly, severe climate conditions such as storm wind and extreme low temperature. Secondly, building content. Construction placement should be done from water vehicle. Construction size exceeds size of bridge elements in several times. By the way the strait is icebound most of the time. Thirdly, bridge operation will be constantly under risk as though piers have to resist ice pressure. The only positive bridge property is its ability to be powerful visual connection between the continents.

Tunnel building is less symbolic, but more realistic and reasonable. Tunnel will carry utilitarian function – deliver passengers and cargo from continent to continent. Sign function belongs to Peace Park. Tunnel is build by automated tunnel boring complexes which cut down endurances. Cutting-through of a tunnel arranged deep under ground level that's why climate factors could not influence on building process.

## **Performance attributes of the tunnel**

The whole tunnel consist of three separate lines. Two of them are for train movements in different directions. Third one located in-between is for natural gas and oil and electricity transit. It also serves the purpose of the evacuation and emergency movement in extreme cases. For this purpose all three tunnels are connected via passages every 350 meters. Those passages are used for air masses movement as well. The tunnel has main stations at either continents and at the peace park. Nevertheless there are two emergency stations in between. The tunnel has three points crossings for direction change if needed. Construction of the tunnel consist of two reinforced concrete shells (inner and outer) and a water drainage space between them. There are pumps installed in this space for water and smoke removal reasons. The drainage space has firewalls every 25 meters.

Vehicle passage through the tunnel is not allowed. Any vehicle transports by shuttle train.

## **Protoform**

### **Tetrahedron**

The imaginary line of physical link between hemispheres crossed with international date line. This point we consider as the main energy unit of the project. Being at the Russian American border geographically doesn't belong to either country. According to current project exactly in this point will be an artificial island covered with a 'dome'.

Proposed form is a regular tetrahedron. Simplex of the 3d space. A tetrahedron is a polyhedron composed of four triangular faces, three of which meet at each vertex. A regular tetrahedron is one in which the four triangles are regular, or "equilateral", and is one of the Platonic solids.

The tetrahedron is one kind of pyramid, which is a polyhedron with a flat polygon base and triangular faces connecting the base to a common point. In the case of a tetrahedron the base is a triangle (any of the four faces can be considered the base), so a tetrahedron is also known as triangular pyramid. Tetrahedron made of pivots is often used in making load-bearing structures, beams and frame constructions for building, bridges, etc. Pivots experience buckling load only. The form is energy efficient in such a surrounding due to normal inner volume and surface area ratio. Building of this shape is the most sustainable and well resists to drifting ice, massive winds and precipitation.

The form reflects sustainability, balance and stability. Symbol of united mankind living in harmony with itself and its environment. Harmony between biosphere and noosphere. Single volume symbolizes what a mankind should consider as a main aim.

### **Semantics of a form**

- New age Babylon tower
- Egyptian pyramids, ziggurat, Mayan pyramid
- shelter of branches
- wigwam, tepee, yurt, tent of skins, yaranga, nomad's tent
- the hub of the universe
- lighthouse, lightship
- sunclack
- iceberg peak

### **Main functions of the pyramid:**

1. Congress hall – survival forum. Place to host international activities related to mankind survival and development.
2. Atrium – Peace park and evergreen oasis. Large scale inner space with partly closed ecosystem, microclimate and expo space.

### **Additional functions:**

1. hotel
2. sport complex and health center
3. technical node
4. transport node

### **Construction technology**

According to current project the tunnel connects two towns – Naukan in Russia and Wales in USA. The middle platform is located at the cross with international date line not touching Diomedes islands.

## **Construction stages:**

1. Reinforcement of a sea bottom at the site.
2. Creation of a concrete foundation of the peace park complex.
3. Elevation of the basic metal core elements using a pneumatic jack and rigid fixation of them.
4. Assembly of spatial supporting frame with elementary 27 meters edge tetrahedron modules.
5. Assembly of spatial load-bearing structure with elementary 4.5 meters edge tetrahedron modules.
6. Performing building envelope from spatial modules:
  - a. Wind turbine module
  - b. Translucent module
  - c. Network corridor.
7. Creation of a ground-to-concrete processing plant.
8. Installation of tunnel boring complex when temperature contour is done.
9. Tunneling towards either continents and from continents towards an artificial island of peace park.
10. When tunnel complete, converting building into a peace park. Using tunnel for a construction site supply.

## **Peace park**

### **Atrium**

Peace park is the atrium that consist of expo space – museum of mankind, partly closed ecosystem with forest and fresh water and being a communication hub connecting 5 blocks. It must symbolize unity, harmony and consciousness of mankind. Translucent walls of the atrium allow to enjoy a views from inside and green oasis from outside.

### **Sun**

There is an artificial sun that perennially radiates light of a wide range needed for photosynthesis.

## **Time machine**

The middle of the atrium crossed by an international date line. That bring today tomorrow and yesterday together. It is a very special philosophic space.

## **Light ray**

A light bridge bridging continents goes through the atrium. It's made by two laser systems installed at either shores. Besides symbolic background that makes possible making a intercontinental lightshows.

## **Exposition**

The main line of the exposition is focused on mankind development and survival. Whole space divided to theme blocks attached to three octahedron atrium sides:

Society – contains history, philosophy, economy and political science;

Planet – contains fundamental science, geography and astronomy;

Spirit – contains religion, art and music.

## **Movement**

The exposition goes upward according to history timeline. There are three programmed movement trajectories in the atrium:

Spiral way upward gives a complete impression of exposition showing history circles.

Upward way separately in each block – allows visitor to concentrate on current theme;

Cross way from block to block – allows visitor to decide himself.

All trajectories listed above physically connect different blocks of pyramid.

## **Biosphere**

An artificial microclimate with abundant greenery. It is a vertical garden filled with various vegetation and indoor artificial sun. This space gives an opportunity to free communication between people of different nation, culture and social status. There is a space to chill and discover.

## **Symbols**

- Light bridge – the bunch of light rays going from either shores through the atrium doubling a tunnel direction.
- Inner sun – a sphere that radiates wide spectrum of light.
- Bridges – numerous bridges inside the atrium.
- Oasis – evergreen island.

## **Noosphere intellectual stratum**

### **Language**

Language is a sign system by means of which people communicate on different levels: thinking, information storing and transfer and etc. “Speech requires speaking people who are present in their talking by themselves at what they doom”, - reasons Heidegger in “The way to language”. Language opens highly complex elements and interconnection; their unity depends on “segmentation” in the sense of laying out a garden what means to mark, dig up, and plant.

### **The Babylon tower of a new era**

The Tower of Babel is a tower in the bible legend written in a first nine verse of the 11 chapter of Genesis. According to this legend after the Flood humanity was of one nation and language. People came to Sennaar (in the lower reach of the Tiger and Euphrates) and decided to build a city (Babel) and a tower up to sky to make a name. God stopped tower building and mixed languages because of what people stop understanding each other and could not continue tower and city building and spread all over the earth. Thereby the Tower of Babel legend explains appearing of different languages after the Flood.

Peace Park as the Tower of Babel of a new era is called to do the opposite function. Being international forum it should solve the problem of language barrier on a new level. Each visitor or staff can use headset with embedded universal translator. Headset reads signals from headsets of other people in a defined radius transforming interlocutor’s speech into necessary language. Such a universal language global system gives not only an opportunity of free understanding but also helps in studying foreign languages.