

Vertical Suspension

The basic idea of this design is to develop a structural principle that can be adjusted and altered according to specific local needs in terms of function and appearance.

The design proposes a vertical layout of the conductors. The isolators are hung on suspension rods and onto each other in one vertical line.

Through the vertical layout of the conductors less surface area is needed (used up) compared to the horizontal layout.

Also the electromagnetic influence of the ground plane is reduced because two of the three conductors have a greater distance to the surface compared to the horizontal layout.

Because of the suspension principle solid crossbars are avoided and thus the new structure has a very light appearance.

Also the swinging of the conductors at the support tower is minimized because each line is fixed between two isolators. Thus the distance between the supporting poles and the conductors can be reduced down to the distance that is needed electricalwise (slim look).

Through additional cross suspension the static (load-bearing) of each conductor is organized independently from each other (even though hanging in one line).

This principle has generated a family of similarly structured towers that can offer different looks and attributes for the different environments and situations that are crossed by the new transmission line.

Transformation

At times the line of towers shows the transformation of one type of tower into another.

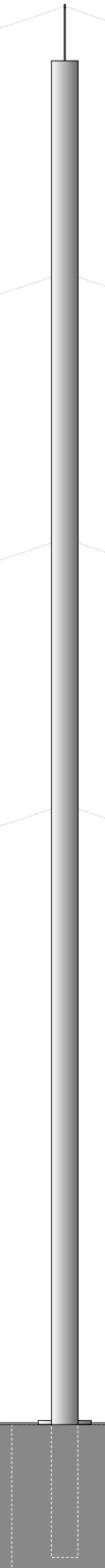
The topic of transformation was chosen in analogy to the aspect of electrical transformation (the transformation of voltage in the beginning and at the end of the transmission line). Also it was wanted to reflect the constant change of the landscape as it is crossed by the transmission line.

Most tower types are constructed in steel (steel-tubes). One type though is done in a translucent reinforced glass fibre material that is illuminated at night from within forming a line of vertical lightstrips (see page 4).

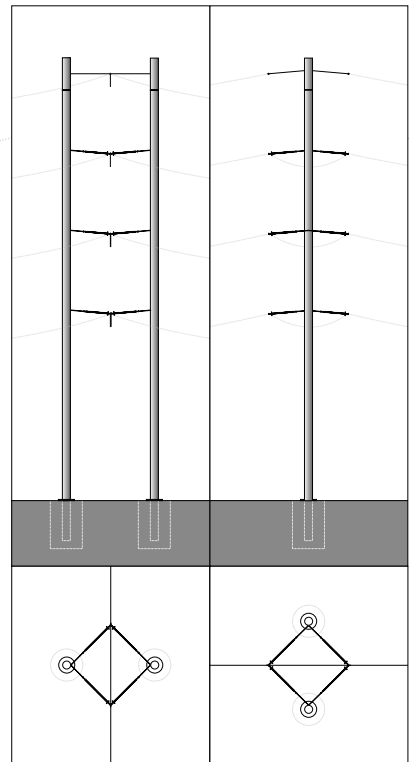
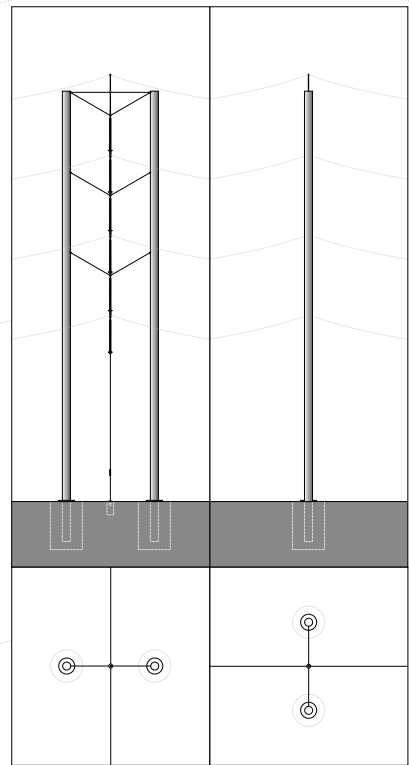
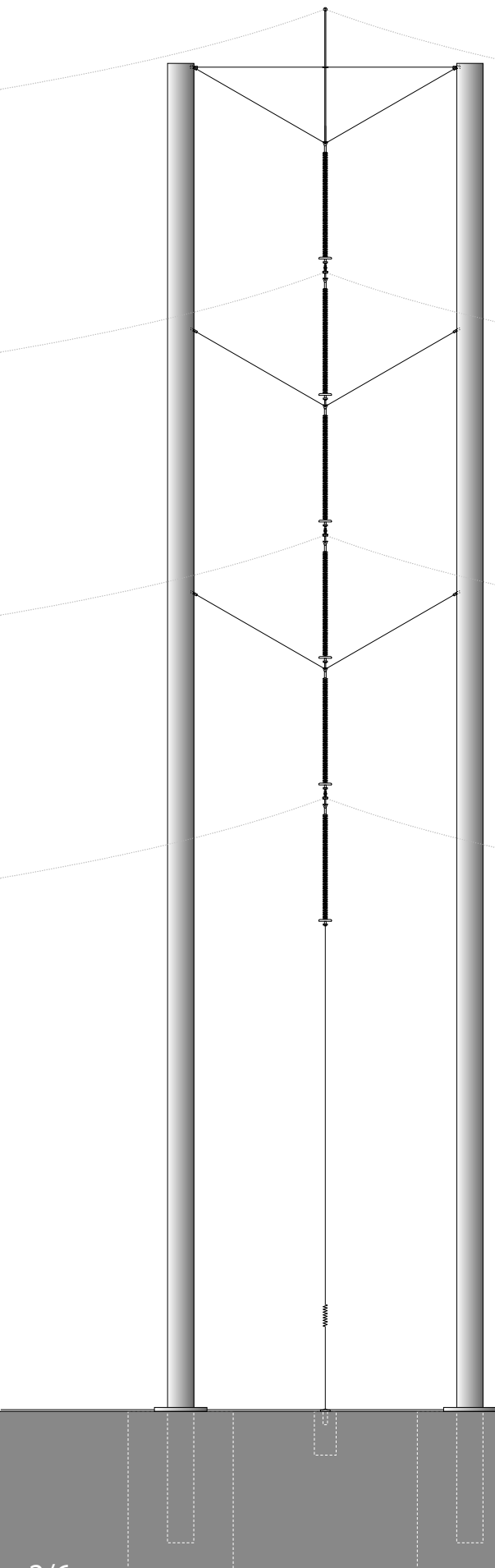
For certain towers (as type II, see page 1+2) we offer two ways of mast construction. One type with stay wires for the erection in the open landscape and one that is clamped in a solid foundation for the use near urban areas.

These few elements are used to generate a wide range of structural possibilities that are able to react to (and to engage in) different situations.

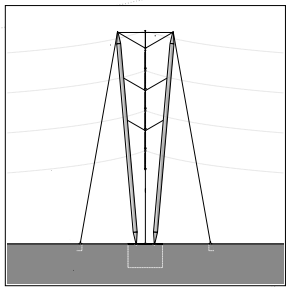
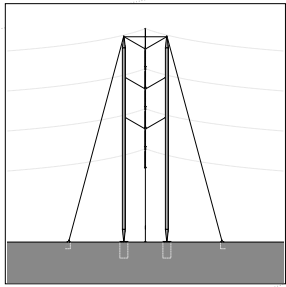
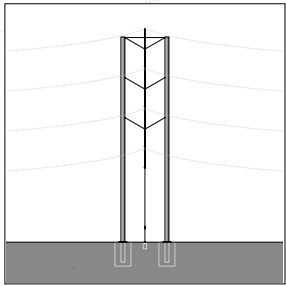
With the concept of the transformation of a flexible structural principle we hope to offer a new tool for the design of future transmission lines that respect and at times add to the unique landscape of Iceland.



right: II-type, sideview, clamped foundation, 1:50



left: II-type, frontview, clamped foundation, 1:50
 above:
 II-type standard tower (with topviews)
 II-type suspension tower (with topviews), ca. every 5 km



views

II-type

II-type - guyed (with stay wires)

from II to V - tilted type

images

in area with lava

in area with lava

in area with lava

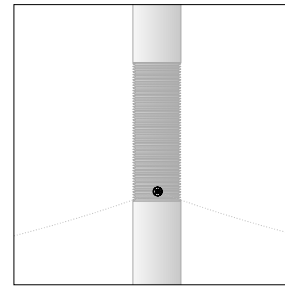
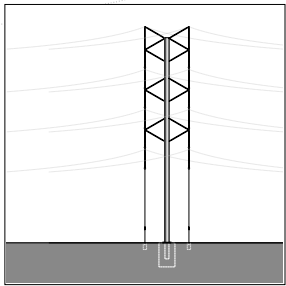
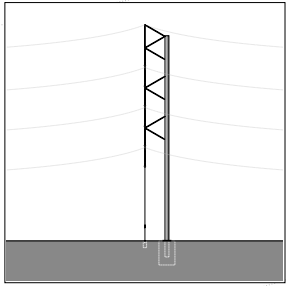
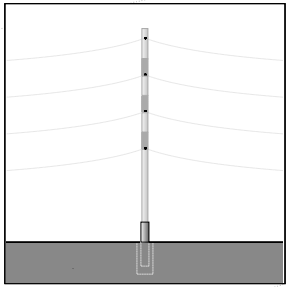
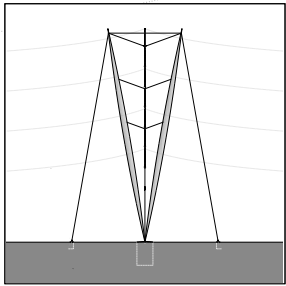
images

near urban areas

on heaths

near urban areas

1:400



views

- type V - „the elegant“
- type I - material: translucent GRP
- type :I (3 lines)
- type :I (6 lines)

images

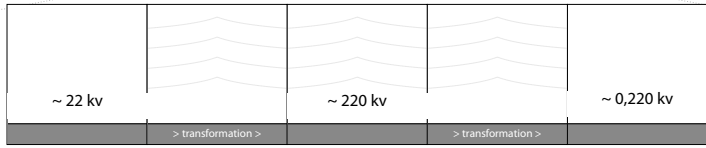
- in area with lava
- in area with lava
- in area with lava

images

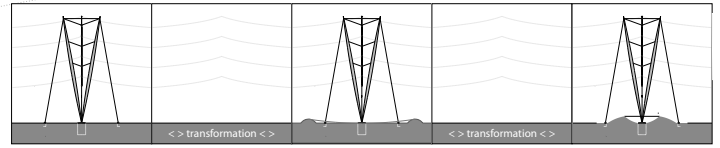
- near urban areas
- in area with lava | ... glowing ... in the night
- in area with lava | ... simple change to 6 conductors (:I)
- type I - material: translucent GRP
- detail (1:50): isolator as part of the construction

1:400

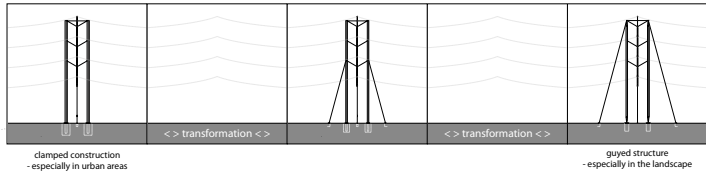
electrical transformation



modulation of topography

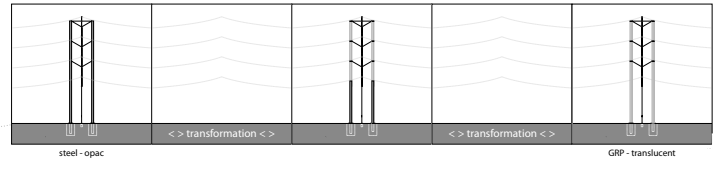


fixation of poles



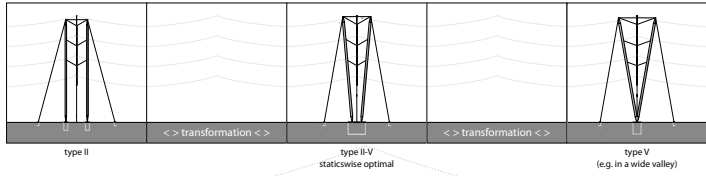
change of material / gradient of transparency ...

... and back



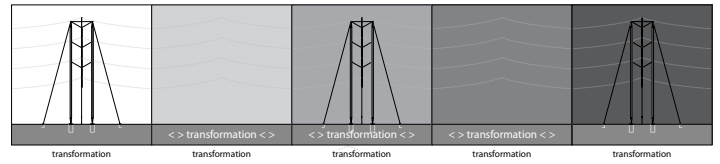
from parallel to tilted form ...

... and back



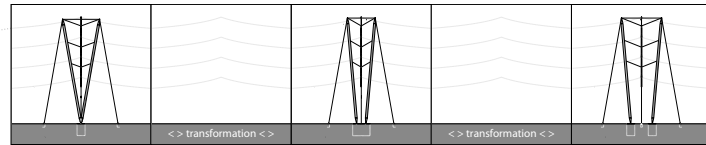
from daytime to nighttime ...

... and back



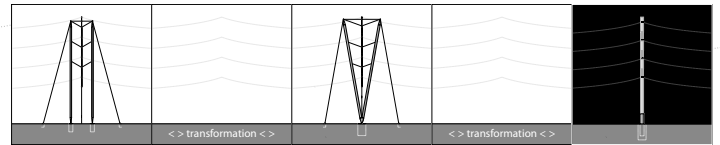
poles come apart

poles come together

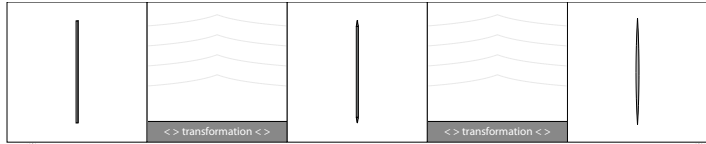


from two-pole to one-pole type ...

... and back



shape of the poles

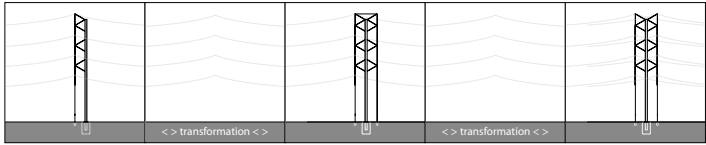


from daytime to nighttime ...

...and back

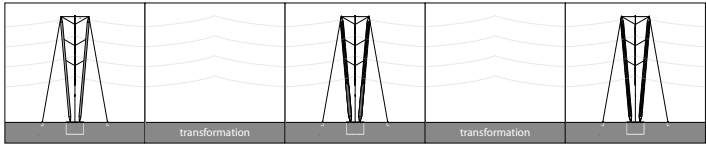


from 3 to 6 conductors

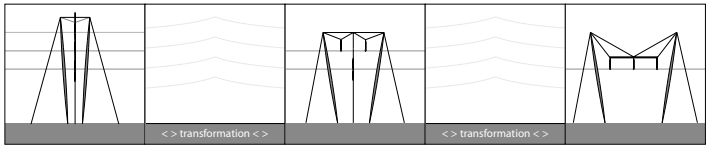


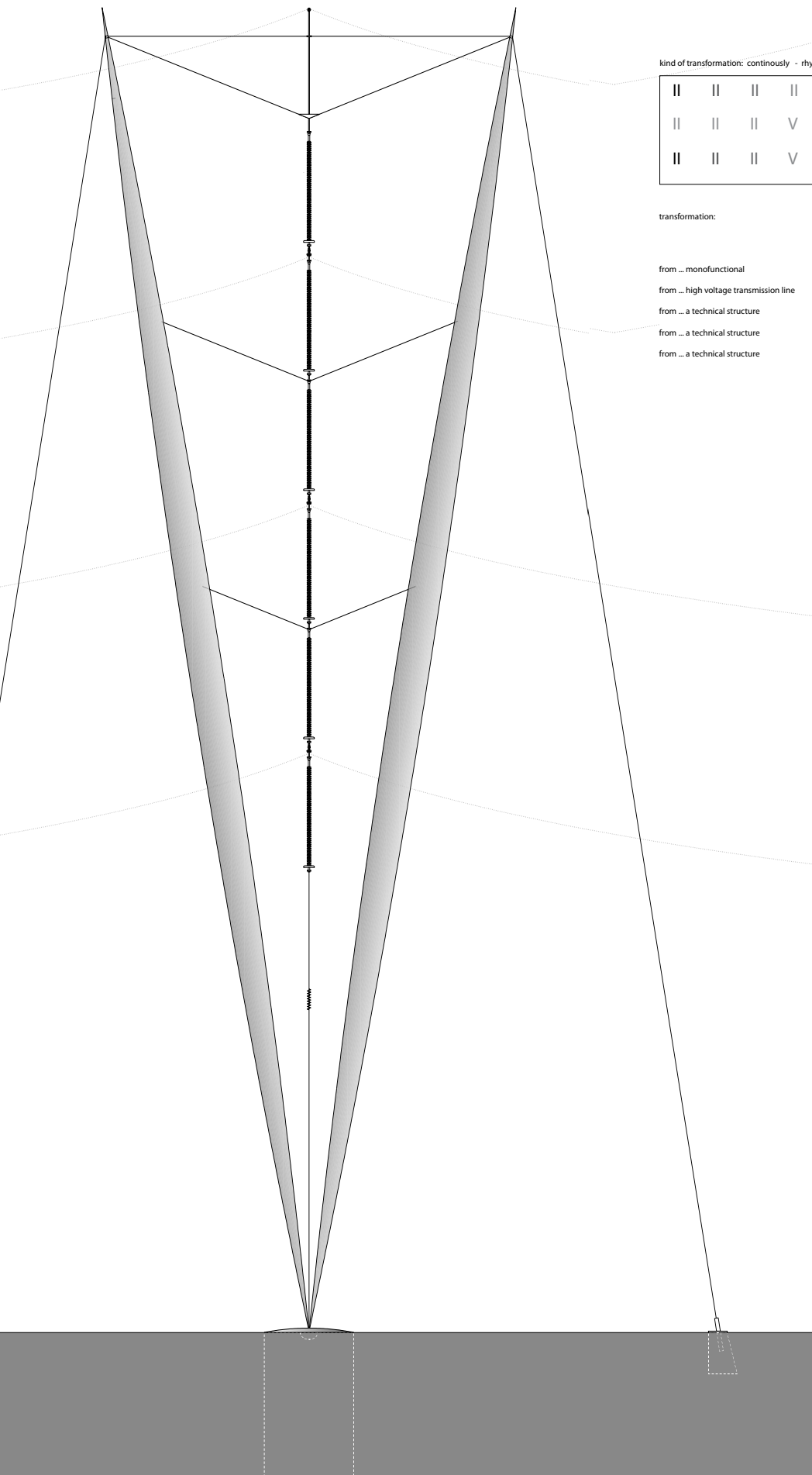
from solid to steelframe pole ...

... and back



connection to existing horizontal layout of conductors ... or where necessary





kind of transformation: continuously - rhythm - overlay

			V			V		V	V		V	V	V
			V			V		V	V		V	V	V

transformation:

from ... monofunctional
 from ... high voltage transmission line
 from ... a technical structure
 from ... a technical structure
 from ... a technical structure

towards ... multifunctional
 towards ... a support system for trekking-tourists
 towards ... a light - installation
 towards ... landart
 towards ... a (touristic) attraction

left: V-type, frontview, guyed, 1:50