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14.0
2014

Landslide at the Highway D 8 Prague – Dresden near Prackovice

Proposals for redevelopment and ideas for design

Conceptional sketches

English Version: 14.02.2014



landslide
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Elbe valley near Prackovice with quarry, railway line and motorway construction site



Description of the accident landslide / Soilslip on 06/06/2013

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- The accident landslide was a succession of a heavy rainfall event 06 till 07 June 2013
- The landslide happened in an eastern slope of Elbe valley near Prackovice, CR
- and was located in a slag heap and in parts of the facilities with buildings of a quarry,
- ca. 350 m west of the construction site of the D 8 Prague - Dresden 56,300 - 56,500 km.
- The railway line Lovosice-Teplice was torn away about 200 m and shifted about 20 - 30 m.
- As a result of the landslide a soilslip with a width of about 200 m was triggered
- The soilslip spilled the highway complete over a width of 200 m with a thickness of 6-10 m.
- The sewer, which laid approximately 3 m below the highway, was destroyed also.
- This suggests a deep soilslip (Erdschlupf).
- The forest was moved east of the railway line along together with its root horizon.
- The sliding surface below the soilslip is estimated at 4 to 10 m depth below ground level.
- The total length of the displacement of soil is in the middle part about 50 m.

(Information of the Czech Geological Survey of 24/06/13 for the Czech state government)



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Soil-slip over the motorway construction site of D 8 near Prackovice km 56,300 - 56,500

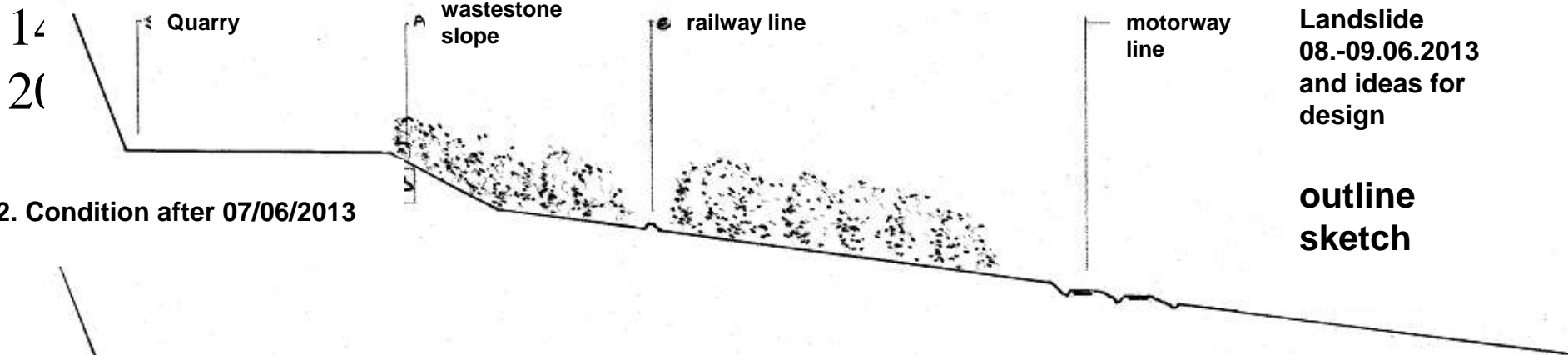


Prackovice

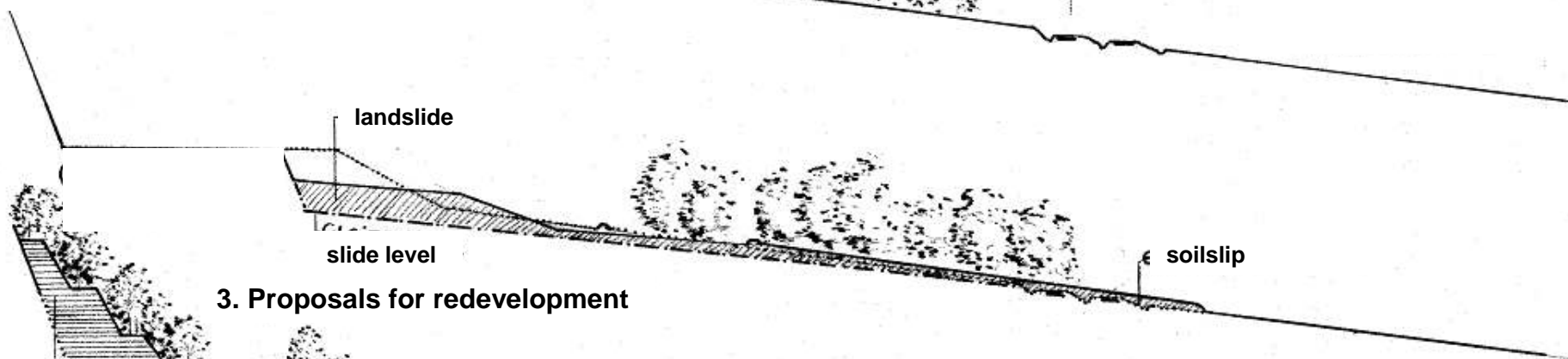
Proposals for the
Redevelopment
of the area of
Landslide
08.-09.06.2013
and ideas for
design

outline
sketch

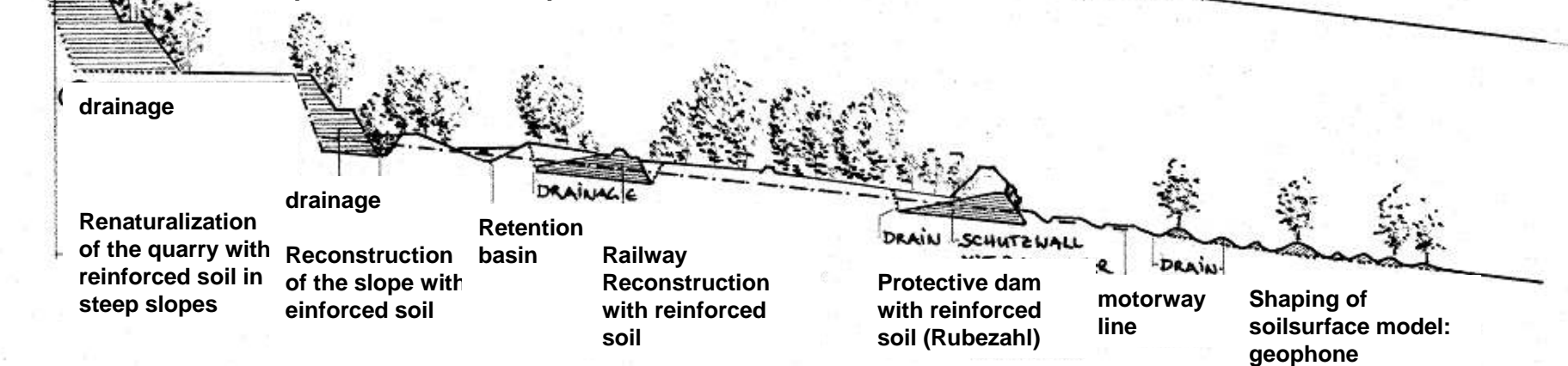
1. Condition before 06/06/2013



2. Condition after 07/06/2013

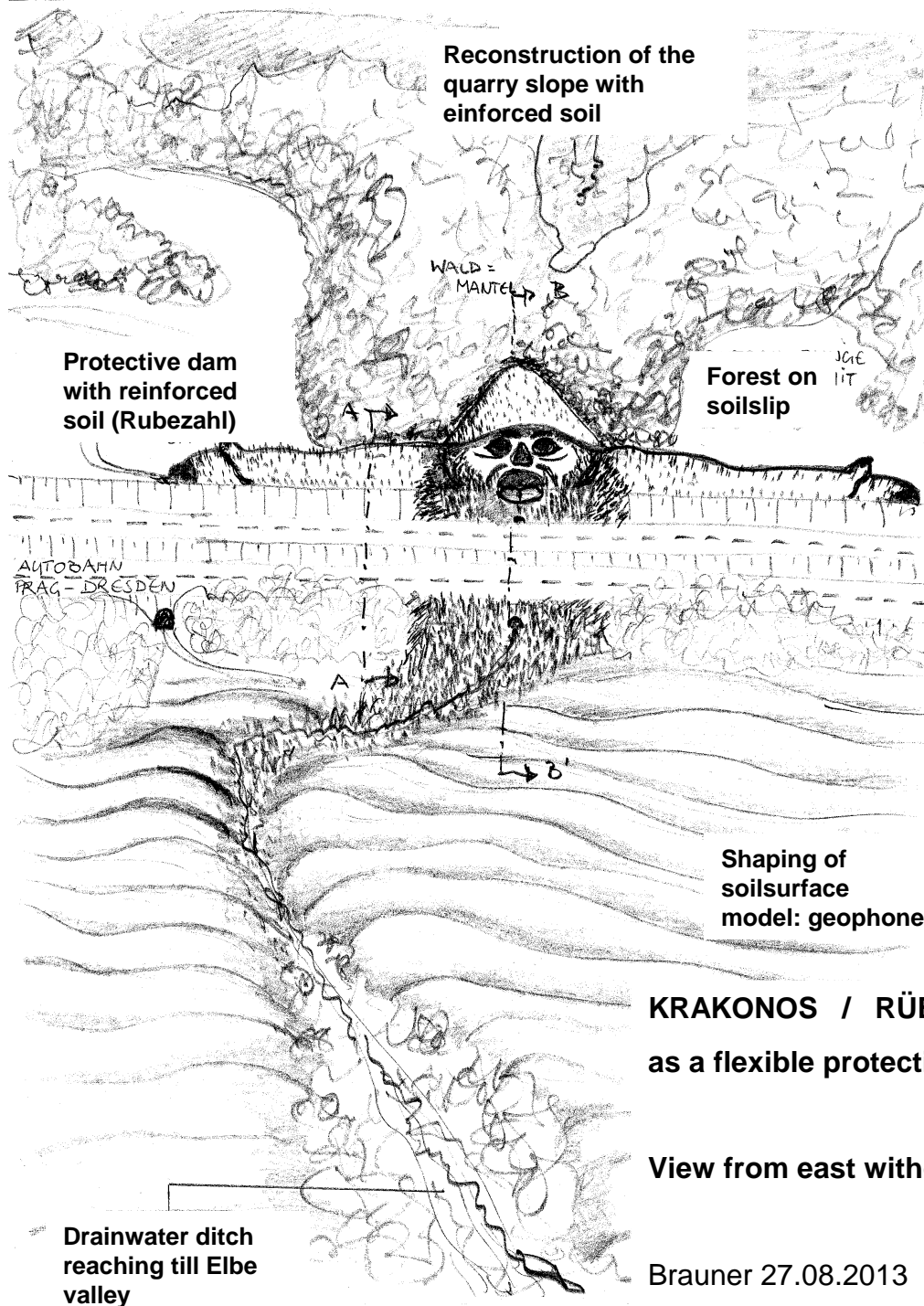


3. Proposals for redevelopment





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Prackovice

Proposals for the
redevelopment
of the area of
landslide
08.-09.06.2013
and ideas for
design

Sketch 1

KRAKONOS / RÜBEZAHL
as a flexible protective dam

View from east without scale

Brauner 27.08.2013

Drainwater ditch
reaching till Elbe
valley



**Image of San Andreas
Fault in California**

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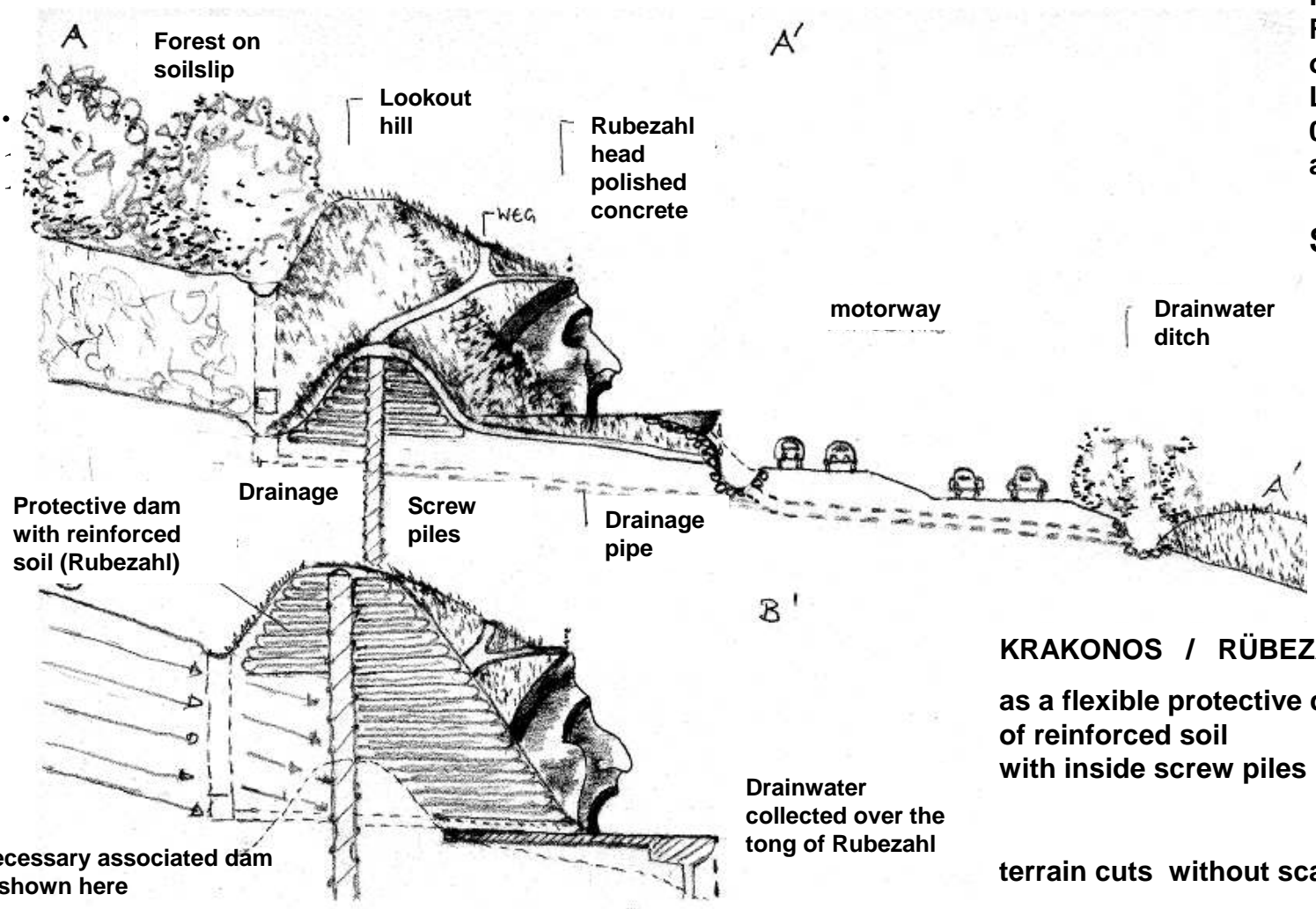


Prackovice

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Landslide
08.-09.06.2013
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Sketch 2a

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KRAKONOS / RÜBEZahl
as a flexible protective dam
of reinforced soil
with inside screw piles

terrain cuts without scale

Brauner 27.08.2013

The necessary associated dam
is not shown here

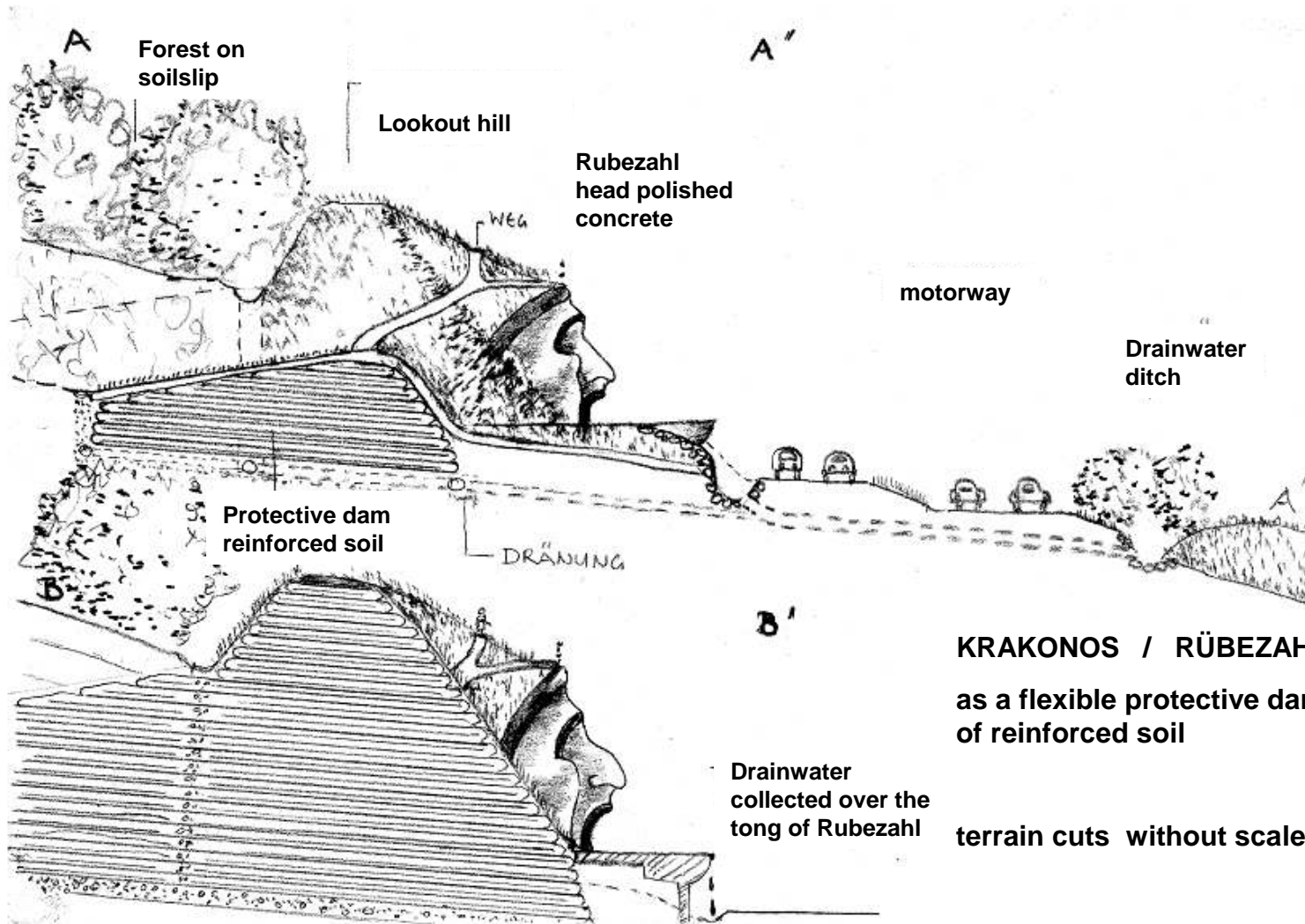


Prackovice

Proposals for the redevelopment of the area of landslide
08.-09.06.2013
and ideas for design

Sketch 2b

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KRAKONOS / RÜBEZahl
as a flexible protective dam
of reinforced soil
terrain cuts without scale

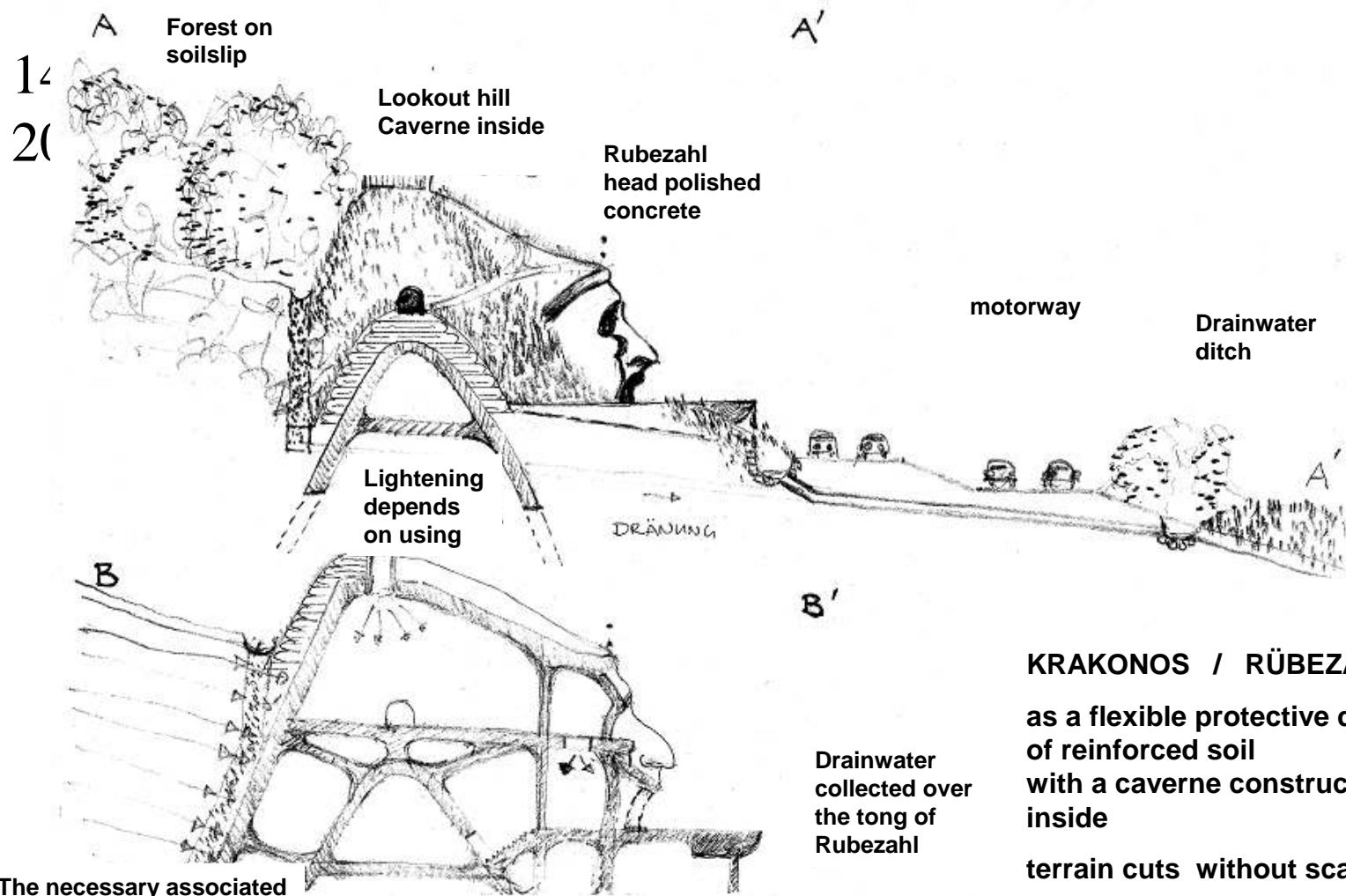
Brauner 27.08.2013



Prackovice

Proposals for the redevelopment of the area of landslide
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Sketch 2c



KRAKONOS / RÜBEZAHL
as a flexible protective dam of reinforced soil with a caverne construction inside
terrain cuts without scale

Drainwater collected over the tong of Rubezahl

Brauner 27.08.2013

The necessary associated dam is not shown here



Prackovice

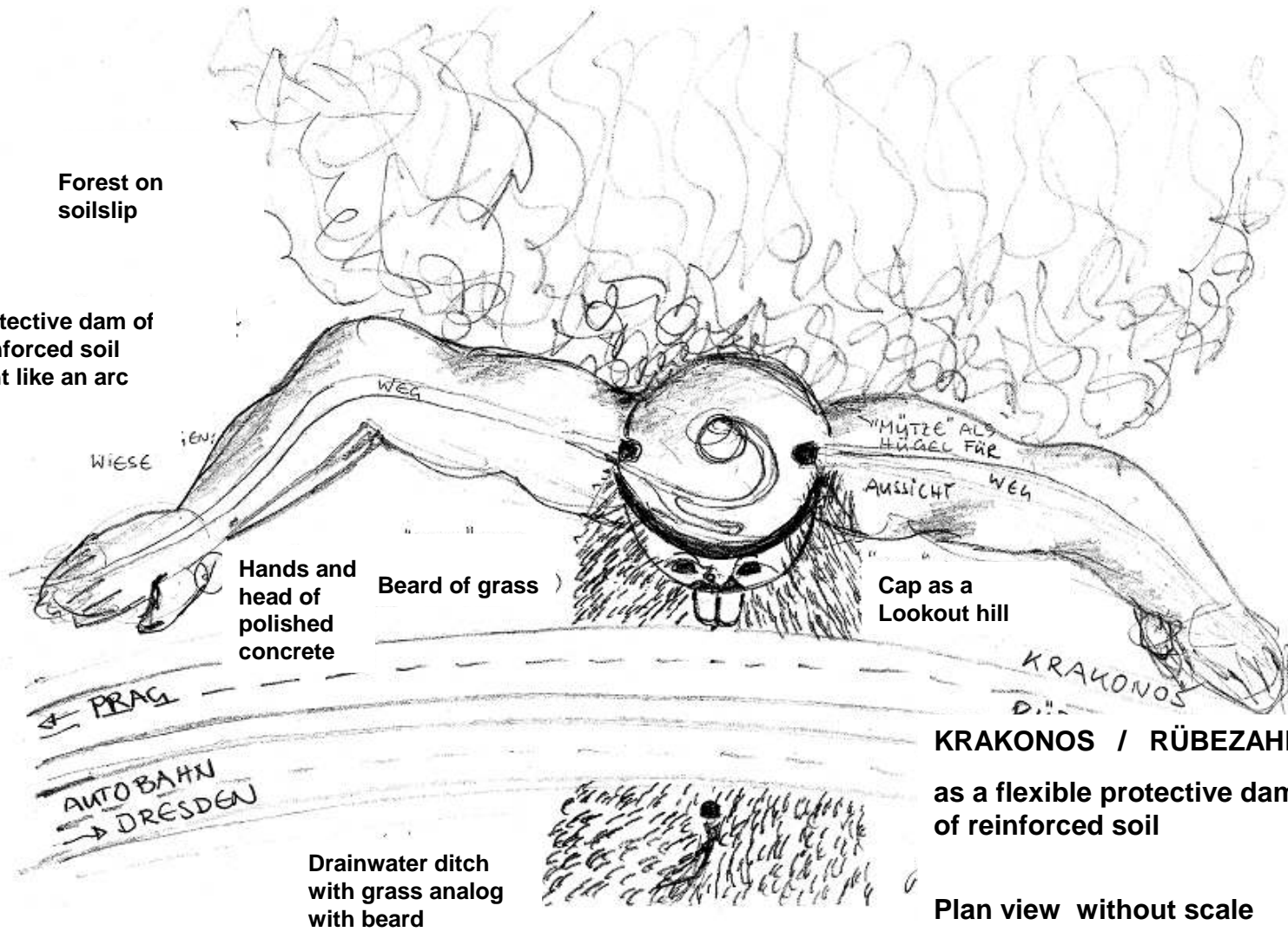
Proposals for the redevelopment of the area of landslide
08.-09.06.2013
and ideas for design

Sketch 3

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Forest on soilslip

Protective dam of reinforced soil bent like an arc



Hands and head of polished concrete

Beard of grass

Cap as a Lookout hill

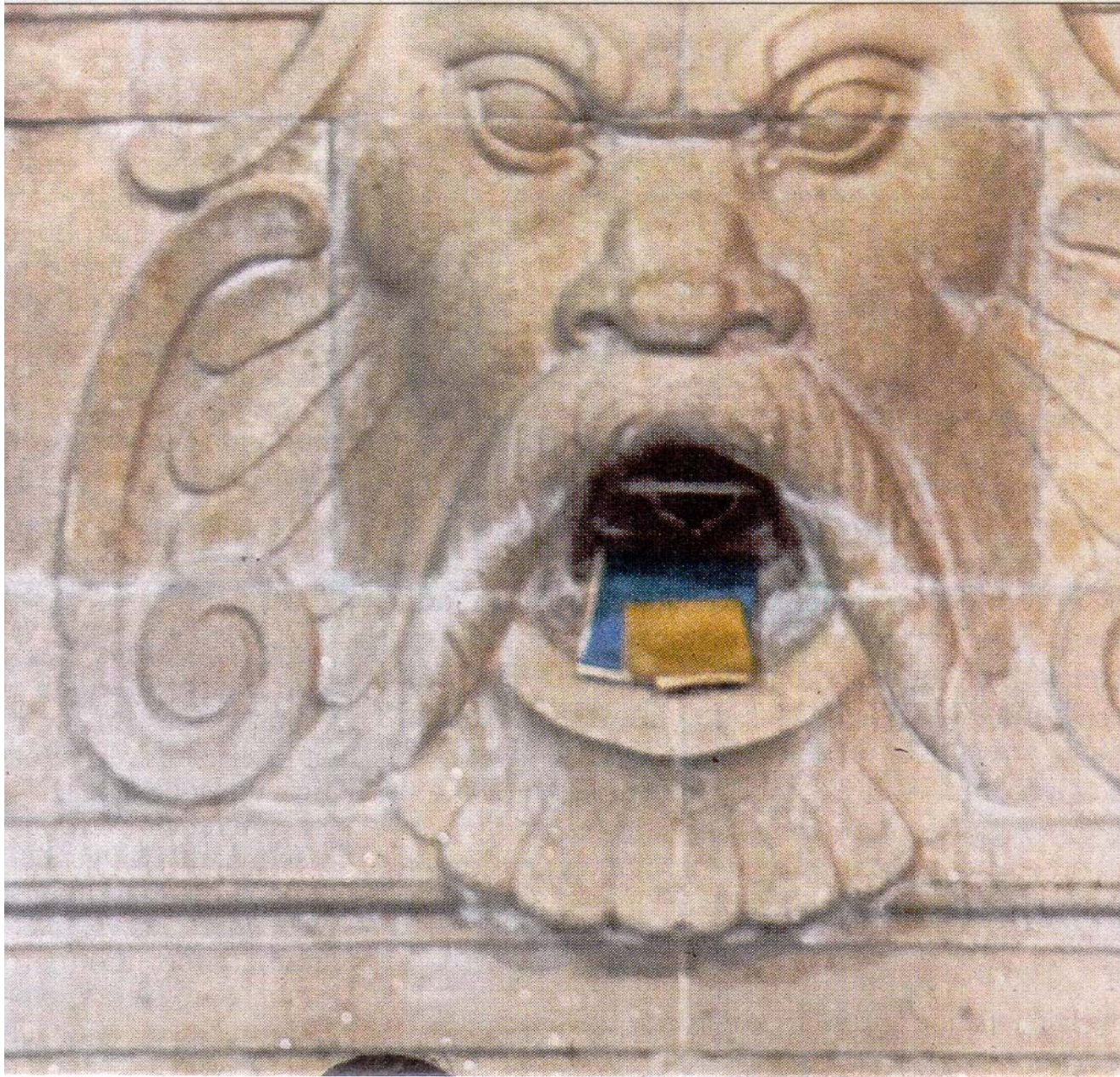
KRAKONOS / RÜBEZahl
as a flexible protective dam of reinforced soil

Plan view without scale

Drainwater ditch with grass analog with beard



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**expression
study A:**

**“lion man”
Head**

**Art
Nouveau
Baths in
Munich**

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**expression
study B:**

**“Rubezahl”
Head**

**Sketch of
Wolfgang
Brauner**



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Basics for system solutions with steep slopes and flexible dams

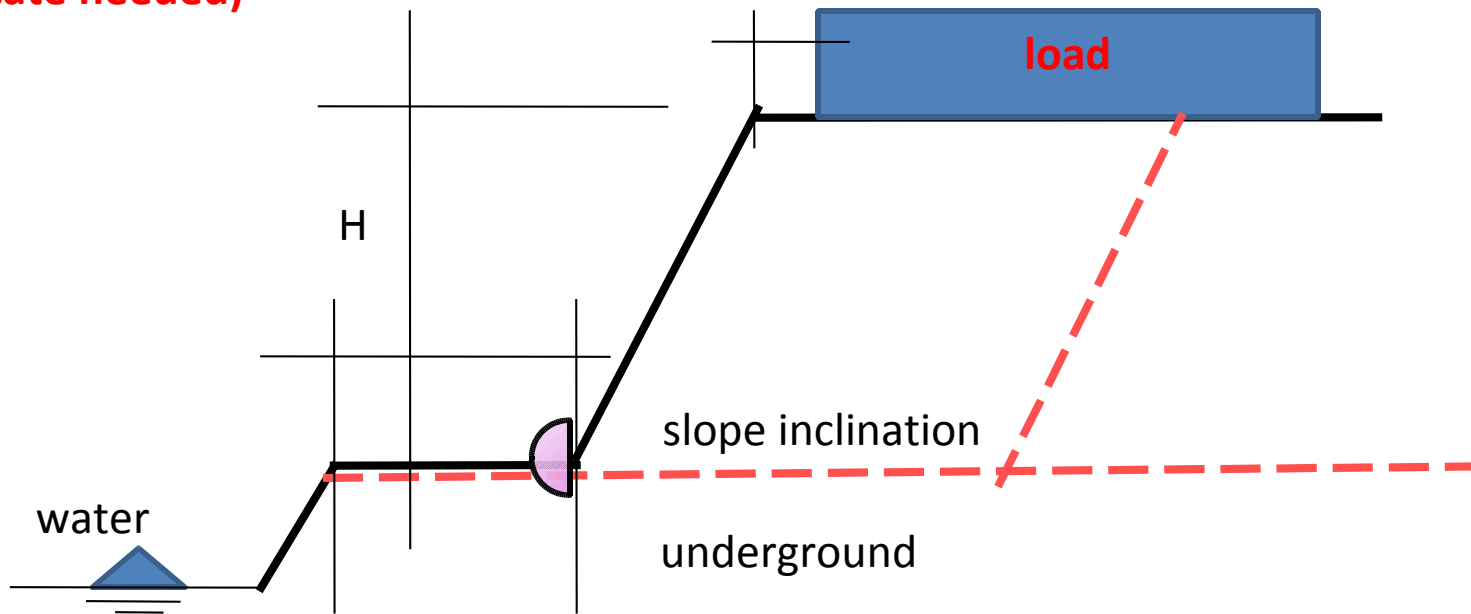
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•soil (certificate needed)

•geometry

•loads

•water





Green solutions till 70 °

Geogrid based on statistics and constructed with „losen shell“, consisting of cases of steelwire-gridmats and geotextile

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Green solutions till 70 °

Geogrid based on statistics and constructed with „losen shell“, consisting of cases of steelwire-gridmats and geotextile

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Green solutions till 70 °

Geogrid based on statistics and constructed with „losen shell“, consisting of cases of steelwire-gridmats and geotextile

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Green solutions till 70 °

First layer in constructioning steep slopes

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Green solutions till 70 °

Next layers in constructing steep slopes

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Green solutions till 70 °

Resilient in construction phase with steep slopes

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State of constructioning a steep slope

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Green solutions till 70 °

Flexibility in shaping the steep slope of the protective wall

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Green solutions till 70 °

Developement of grassy steep slope after moist sowing

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Green solutions till 70 °

Steep slopes planted with shrubs

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Definition of the goals, basics and conditions

Definition of goals:

- Avoidance of factors which are causally related to the soilmoving
- Consolidate the landslide masses
- Shaping the soil masses with an artistic and tourist claim
- Finding a consensus to be made on of all stakeholders
- Timing of the measures on the treatment of regulatory requirements (nature conservation, water management, financing, availability of land.
- Clarifiing the railway operation (resumption or shutting down)
- Fixing conditions for sustainable operation of the quarry (collection and harmless dissipation of waters).
- Conversion also towards a restoration of the quarry (eg aim of tourist use of the quarry site)

Basics:

- data-based geotechnical measures at the design considerations

Conditions: Collaboration of the road directoriate

- with the Czech Geological Survey,
- with the quarry owners and
- with the community of Prackovice (eg safe drainage down towards the Elbe terms)

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Tasks in the redevelopment of the landslide area

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- A) "Soil structure design,,
(cultural, artistic and tourist claim)
- B) „Harm avoidance measures for the
motorway and other sites"
- C) "Resumption of railway operation
or its shutting down"
- D) "Quarry reconstruction,,
(Reconstruction of the using and
beginning of its renaturalization,
prospecting a restoration of the quarry
site with aim of tourist use in a long term)



Advantage of this presented conceptual sketches

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Support of decision-process :

This presentation should be a first compilation

- of the conditions of the environment**
- of possible variations for a restructuring plan
based on clarification of the terms of reference**
- of a possible artistically interpretation in the
shaping of the soil masses**
- of a possible touristical effect**



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Thank you very much for your
attentiveness