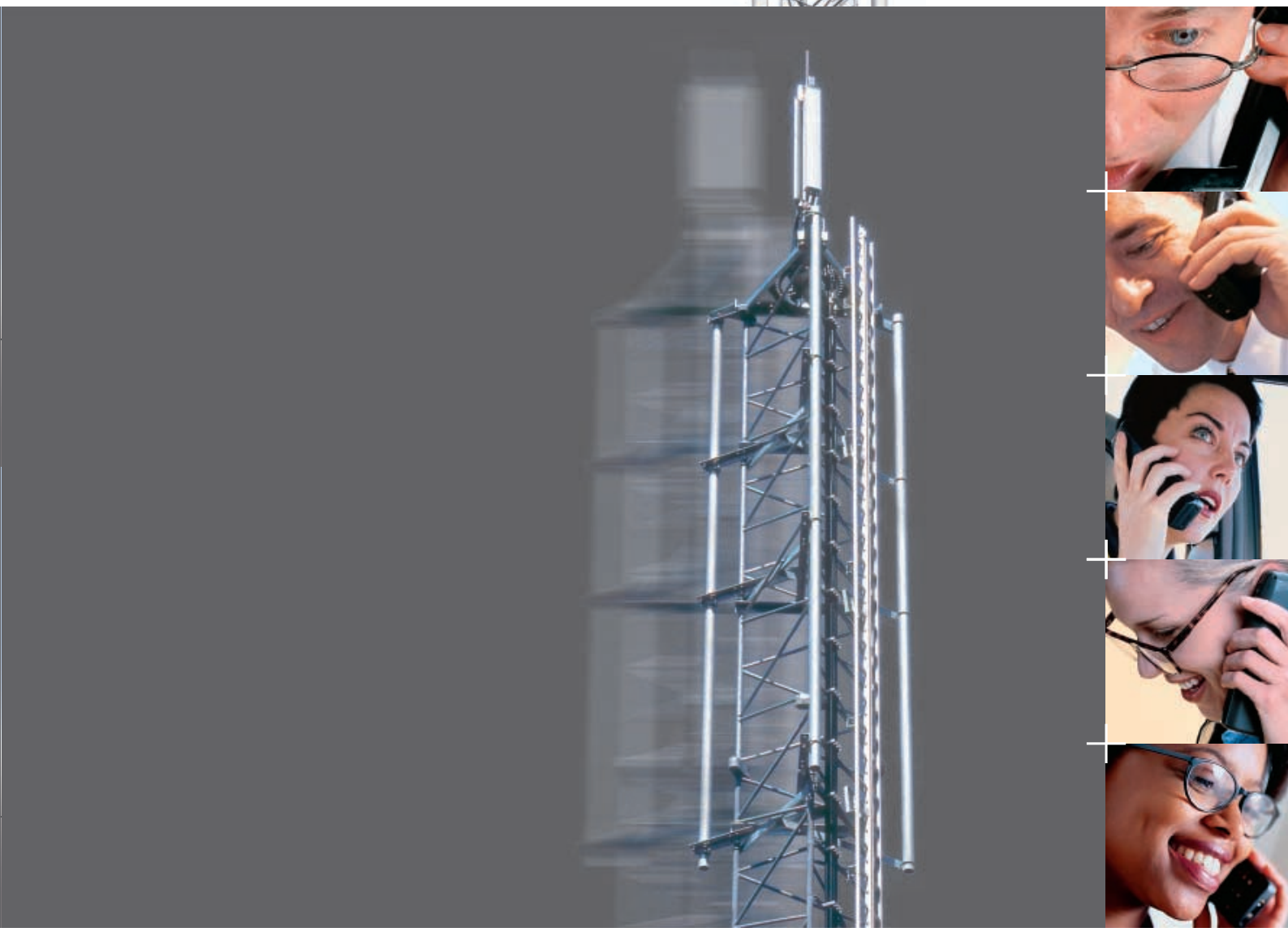
GTS

Pylon-System



ABEL

Antennen-Dienste

The Requirement

flexible · easy handling · fast

You want to erect new stations in a short term? Realize sites “in the open countryside” without existing buildings?

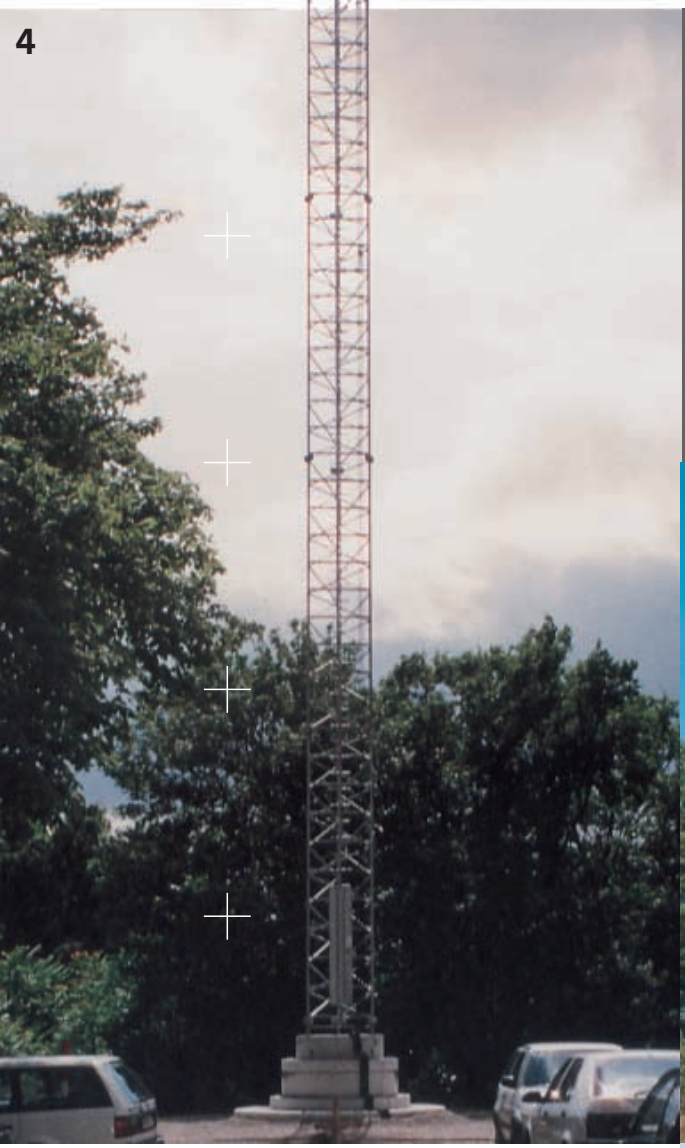
The installation should be economical and efficient? Do you require your antenna pylons to be both expandable in a unit construction system and reusable?

You plan to reserve space for future site sharers?
You want to enlarge or transfer the site at any time? You also take rough or difficult grounds into consideration?

You are expecting a partner for professional project management?

The Antenna Pylon:

light construction · individual · expandable



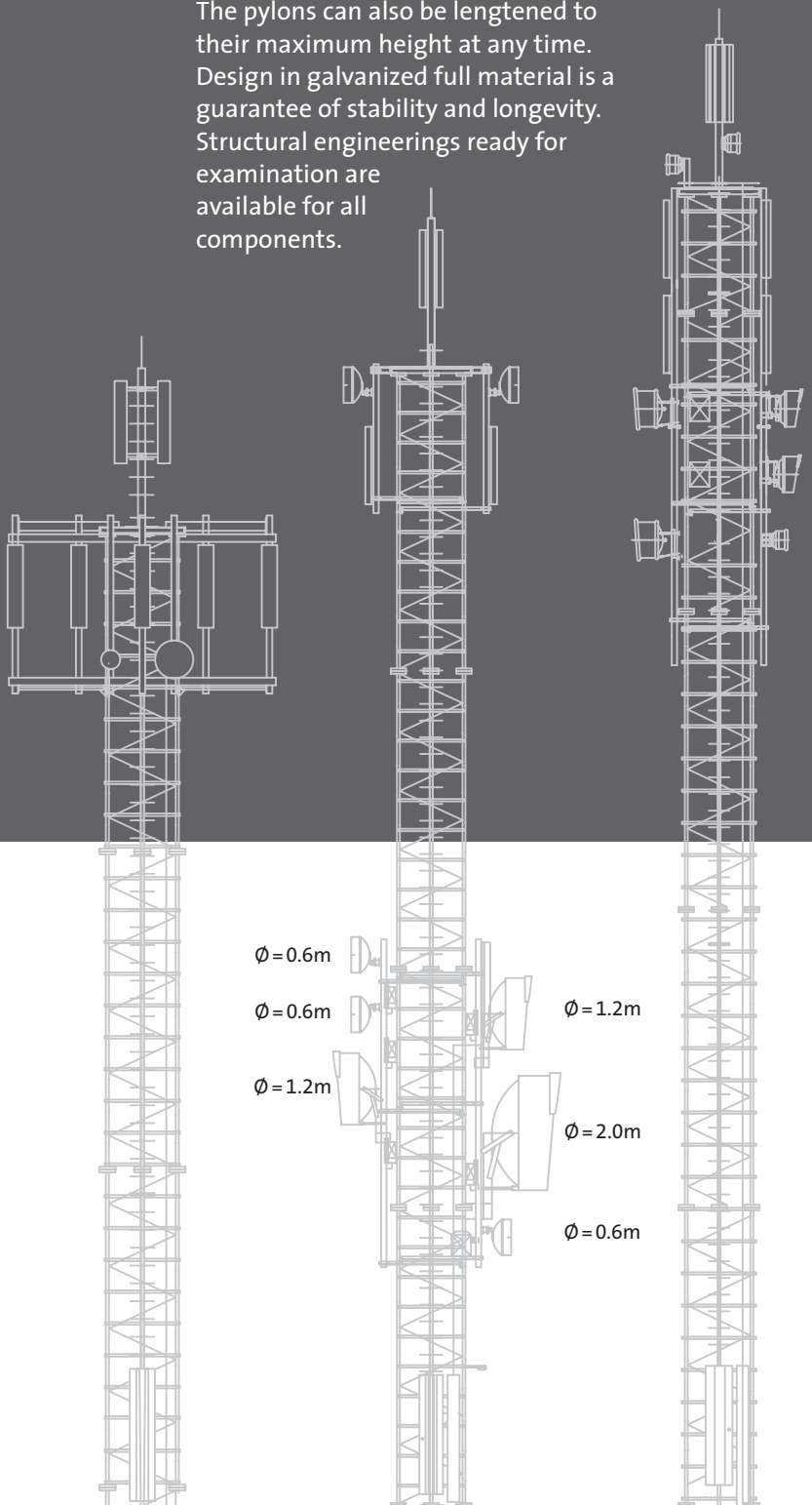
Due to the stable but filligree type of construction the GTS plyons form an integrated part, hardly unnoticed, in the landscape. Therefore, approval by the nature authority gets easier.

1. *Pylon, 10 metres, with 3 sectors and micro-wave linkage.*
2. *Pylon, 20 metres with omni antennas.*
3. *Pylon, 10 metres, 2 network operators with 3 sectors each, 4 metres diversity, with micro-wave linkage.*
4. *Pylon, 26 metres, erected temporarily.*
5. *Pylon, 15 metres, with 3 sectors, micro-wave linkage, TV and radio transmitter in a nature reserve.*
6. *Pylon, 10 metres, two network operators, both GSM and UMTS.*
7. *Pylon, 10 metres, occupied with micro-waves.*
8. *Pylon, 23 metres, with 3 sectors.*

Various arrangements of antennas are possible upon request.

time-saving · economical · tested

Economical unit construction system
The pylons were designed for 8.0 up to 23.0 metres. Variable heigths can be achieved by a combination of 2 m-, 3 m-, 4 m- and 5 m-pylon shots. Special solutions with heights up to 30 metres can also be achieved.
The pylons can also be lengtened to their maximum height at any time. Design in galvanized full material is a guarantee of stability and longevity. Structural engineerings ready for examination are available for all components.

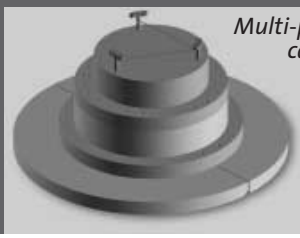


Standard structural engineering
A standard structural engineering is available for all additional construction heights of the model "L" range based on flat rate starting-points of weight according to current standards (please see table below).

Site structural engineering
An individual structural engineering for each respective site can be supplied upon request. An inreased available antenna utilization can be achieved.

Flexible extension
The pylons offer reserves for improvement and site share. Pylons of 10 metres can be converted up to 23 metres at any time.

Complete including foundation
The pylons can be installed in conjunction with single foundations or on containers. Prefabricated concrete foundation parts for single foundations or slab foundations for container-installations can be offered.



Multi-part prefabricated concrete foundation

Results according to standard structural engineering
Flat rate calculation of wind target inclusive cable running and climbing ladder:
- with complete build-up pressure
- with complete factor of gust reaction
- with a coating of ice of 3 cm

Available wind target at the antenna at the upper edge of the pylon (extract)

Height	wind area **1**	wind area **2**
23 m	7 m²	4 m²
20 m	11 m²	7 m²
15 m	12 m²	8 m²
10 m	19 m²	14 m²

The Solution:

multi-functional · reliable · comprehensive

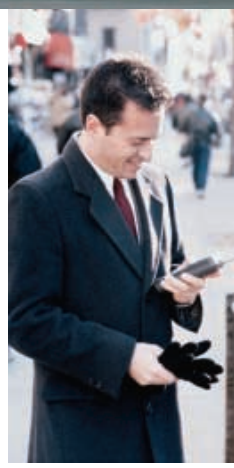
Site installation from the beginning to end

i.e. construction of a GTS antenna pylon (total height of 25 metres) for two network operators with a container for temporary use at a car park.

GTS pylons bring cost savings and will cut down your time taken for building, because:
Foundation and pylon are installed within one day. All elements are out of one unit construction system and are therefore, prepared for the installation of antennas and system technology. GTS installations can easily be dismantled and rebuilt at new locations (inclusive foundation!).
Delivery period of GTS is only 14 days. All antenna systems can be installed on GTS pylons.

On request we offer an extensive service with erecting GTS installations:

- Clarifications with local authorities
- Acquisition of real estate
- Preliminary planning
- Planning of sites
- Planning and building permission
- Supply and construction of complete installations, starting with foundation, container to the pylon
- Management of difficult topographical conditions (i.e. rough grounds or moors)



The Container:

robust · complete · mobile

We supply the best-fitting container for your system technology. Requiring only 18 square metres it offers sufficient room for all installations (inner measurements: length 3.85 metres, width 2.00 metres, height 2.30 metres) and can be installed in combination with a pylon up to 25 metres.

The mechanical room offers protection against damage and unauthorized access to the pylon.

The interior is consisting of Delitherm wall elements. The covering can be supplied in wood or metal. Special requests, i.e. varnishings can also be realized.

The floor is equipped with an antistatic PVC covering.
Even without excavations the container can also be installed temporarily on a reinforced area.

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