



## Datasheet

### Parametric Input

#### esa.11 Parametric input

Almost any element of a structure can be defined as a parameter (coordinate, dimension, load value, section...). It is even possible to use formulae calculating certain parameters starting from other values. Once the parameters are defined, they are assigned to the structural object (node, bar, load) concerned. They can be saved in a clear tab structure. When launching such a project, the parameters concerned are completed, so that the structure and the accessories are immediately generated. Also applicable to user blocks (see esa.00)

# Parametric Input

esa.11

The parameters can be used in a single project to enable the optimisation of an engineering solution or for necessary enforced modifications.

For instance, a size of several frame spans must be increased for some reason. With parameters, it is just a matter of editing the values of the corresponding parameter. SCIA • ESA PT then automatically regenerates the model according to this modified parameter. The structure can be recalculated and the document can be regenerated automatically.

For example, the user can prepare a parameterized project for a continuous beam, two-store planar frame, an arch bridge, or any other simple or even complex type of structure. In addition, the parameterized project can also contain document chapters.



Required module: Base Modeller (esa.00).

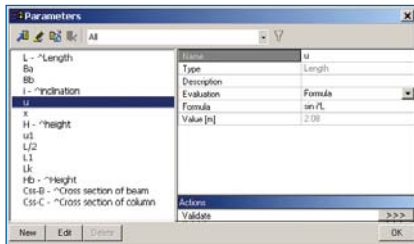
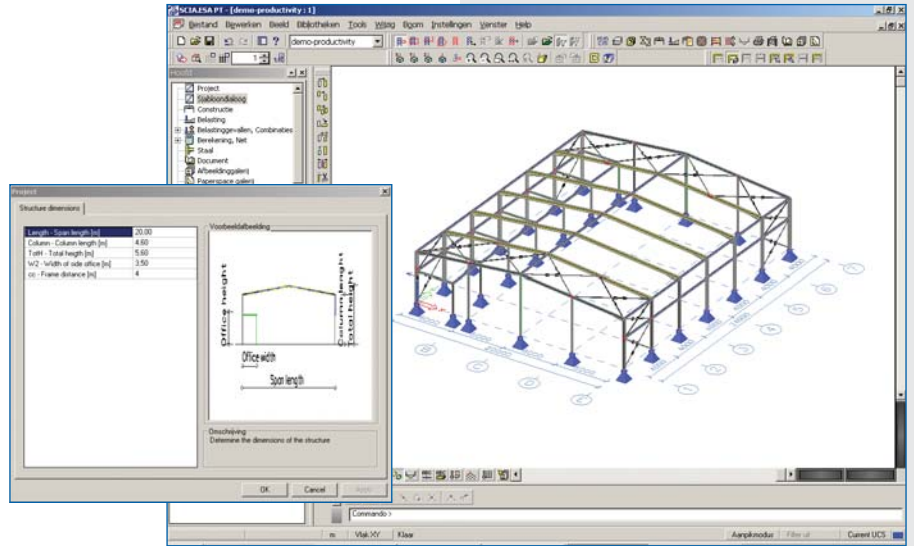
## Parametric Input

### Using Parameters

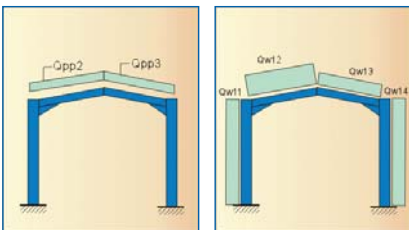
Almost any value that specifies the structure model can be defined as a parameter.

The parameter can determine the position (x-, y- or z-coordinate) of a member end-node, the value of an imposed load, the cross-section that was used, the visibility of a table in document, etc.

What's more, the parameters may be used in formulas and specify the relation between individual parts of the model.



Once the parameters have been defined they can be assigned to the appropriate value of the model.



Finally, to organise the parameters neatly, you can define tab pages which contain your choice of parameters.

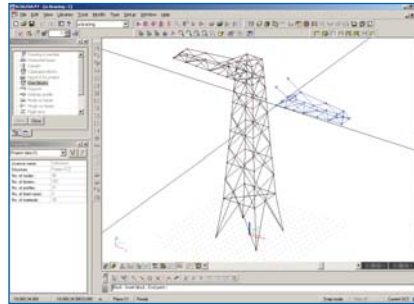
In combination with user blocks, a standard functionality of SCIA • ESA PT, it allows you to import your own prepared (parametric)

## Highlights

- Model geometry and properties defined by means of parameters.
- Easy and fast modification of the model.
- Simple manual "optimisation" of the design.
- Preparation of templates for often-repeating types of structures.

projects into another project as a sub-structure. In this way you can model your construction faster because you do not have to model similar construction parts each time from scratch.

Practical solutions can be found in: frames, towers, racks, ...



User blocks are part of the Structure function. From this function all structural items can be inserted.

The user block library is a sophisticated, but simple to use collection of projects stored at a specific location. The directory structure at this location is used as a tree and the projects in these directories are shown as user blocks. A user block can be as complex as you make it. You can add supports, loads, parameters, connections, etc. to your project and save it as a user block.

In combination with the project template functionality of the Productivity toolbox module, the user can create parameterized projects that may include geometry, loads, combinations and a document. This allows you to prepare standardised calculations for one type of structure and do the calculation in a matter of minutes.

