

*Nothing lasts forever:  
Invest in rehabilitation  
in a timely manner*



**CLASSIFICATION**

Civil works according to  
ISYBAU 2006/2015 and  
DWA M 149-3/DWA M 149-7



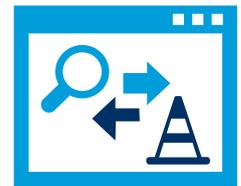
**REHABILITATION**

Rehabilitation  
design based on visual  
inspections



**COST COMPARISON**

Comparison of the  
costs for replacement,  
renovation and repair



**VISUALISATION**

Comparison of inspection  
data and rehabilitation  
measures

## EFFECTIVE REHABILITATION DESIGN

With BaSYS PISA rehabilitation design, several rehabilitation versions can be created on the basis of a visual inspection and compared to each other. This possibility can be used for example to compare the cost of replacement, renovation and repair. For each rehabilitation measure, the costs are automatically determined using the units of measure and unit prices specified in the rehabilitation library. A cost comparison can be performed between the replacement, renovation and repair options. A cost estimate according to DIN EN 1610 in open construction is taken into account to determine the cost of a replacement option. Subsequently the costs that were determined can be transferred to the economic efficiency comparison. The results can be output in report form, in a schematic pipe diagram and as a theme layout plan.

## FUNCTIONS

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- Standardised interfaces (ISYBAU 0196/0601 and ISYBAU 2006/2013, DWAM 150)
- Freely definable rehabilitation measures library across projects
- Assignment of measures to entire objects – sewer segments, service pipes and manholes
- Specific assignment of measure for single damage
- Cost estimate for replacement according to DIN EN 1610
- Cost comparison between replacement, renovation and repair
- Representation of results in printed lists, schematic graphics and theme layout plans

## DATA MANAGEMENT

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Sewer inspection data can be imported and administered for specific orders. This approach supports the parallel administration of any number of sewer object inspection datasets for different times (history management). Different bodies of rules and regulations, for example inspection data with DWA M 143-2 or DIN EN 13508-2 damage codes, can also be administered in parallel.

## DETERMINING THE REHABILITATION PRIORITIES

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In order to determine priorities for required measures based on the condition data from a visual inspection, all common civil engineering condition classifications are available in BaSYS. The civil engineering condition evaluations ISYBAU 01/96, ISYBAU 06/01 and DWA M 149 are available for the coding system DWA M 143-2. The ISYBAU 2006/2015, DWA M 149-3 and DWA M 149-7 civil engineering classifications can be used for the DIN EN 13508-2 code-decode system.

## REALISING A REHABILITATION DESIGN

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Assigning rehabilitation measures to the corresponding defects of the inspected sewer objects is performed easily using drag & drop in a form with multiple windows. In order to work quickly and effectively when performing these manual engineering activities, it is also possible to assign several rehabilitation actions to multiple defects at the same time. To help select the right rehabilitation measure, it is possible to view the respective defect in the corresponding digital

inspection video and to access the assigned digital photos of defects directly. Players of other manufacturers such as Panoramo by IBAK are naturally supported for the media viewing of defects as well.

The Rehabilitation Wizard supports automated rehabilitation design. Based on our own empirical values and under consideration of individual sewer segment or manhole-specific civil engineering and local conditions, such as the nominal width or depth position, own strategies can be defined and applied on the basis of the standard construction processes such as repair, renovation or replacement.

## ECONOMIC EFFICIENCY COMPARISON

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The costs determined through rehabilitation planning can be transferred to the economic efficiency comparison. This is regulated by law according to the Federal Budgetary Regulations and DWA Worksheet 100. The cost of the respective rehabilitation alternative, the development of cumulative costs at present value over time and the results of the sensitivity analyses are calculated and presented in graphical form in this economic efficiency calculation.

## INDIVIDUAL SOLUTIONS



Complex tasks demand unique solutions. We work with you to develop a concept in order to adapt our products to your individual needs for efficient application. The BARTH AUER consulting team offers advice, training and support from the first meeting to smooth operation in your company.

## REPORTING, CONDITION AND REHABILITATION PLANS

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The results of rehabilitation planning can be viewed and output in various forms. Standardised reports are available and an export to Microsoft Office is possible as well. In a schematic pipe diagram, each rehabilitation version can be graphically compared to the corresponding assigned visual inspection.

Theme plans with various layouts and scaling are available to output rehabilitation design site plans.