Release Notes

In general, Allplan Bridge is updated with the regular Allplan main releases and the monthly Hotfixes. With older main releases Allplan Bridge will not always be updated with all Hotfix releases, but only if critical bugs are fixed.

In the following you can find an overview of the most important features of the Allplan Bridge versions released so far (details, small enhancements and fixes are not included). The versions are listed in reverse chronological order of their release dates.

Allplan 2021-1-10, October 2021

Minor changes and fixes

Allplan 2021-1-9, August 2021

Minor changes and fixes

Allplan 2021-1-7, July 2021

Minor changes and fixes

Allplan 2021-1-5, June 2021

Minor changes and fixes

Allplan 2021-1-4, June 2021

Minor changes and fixes

Allplan 2021-1-2, May 2021

PythonParts

The import or update of the bridge model in Allplan failed, if a PythonPart was used in several structural members.

Tendons

In some cases, the constraints α-u and α-v for tendon points were swapped when both were given.

Beam elements

Occasionally, in the analytical model beam elements of piers with a non-vertical beam axis were additionally rotated.

Other minor changes and fixes

Allplan 2021-1-1, May 2021

Minor changes and fixes

Allplan 2021-1, April 2021

General

Due to the additional implementations the user interface was enhanced in the task cross section.

Cross section -> Placements

The functionalities of Placements (formerly Smart Placements) were extensively enhanced.

In addition to objects of the typ smart symbol (*.nmk) now also PyhtonParts (*.pyp) can be used as placements. Moreover, now there is the possibility to define the alignment of the objects in advance in Allplan Bridge. Further, the parameters of the PythonPart objects can directly be edited in Allplan Bridge and optionally be defined by variables.

Several small corrections and improvements in various areas

Allplan 2021-0-6, February 2021

Minor changes and fixes

Allplan 2021-0-5, February 2021

Minor changes and fixes

Allplan 2021-0-4, January 2021

Minor changes and fixes

Allplan 2021-0-3, December 2020

Minor changes and fixes

Allplan 2021-0-1, November 2020

Minor changes and fixes

Allplan 2021-0-0, October 2020

General

Due to the additional implementations the user interface was enhanced and improved in various areas.

3D Modelling

A new tab in the action bar with various tools for the interactive modelling of the geometric and static model was added. For a quick access, this bar comprises the tools for creating the 3D model, which are originally called up by the various menus in the project navigation tree. The functionalities of some of these tools were enhanced. Further, additional tools were added, such as inserting/moving a series of stations and the interactive view of the cross sections along a structural member.

Tendons

It is now possible to input an eccentricity in longitudinal direction when defining tendon points.

The output of a report for tendons was implemented. This comprises the tendon geometry by means of eccentricities to arbitrary user-defined reference points, as well as the forces and elongations of the tendons due to the defined tendon stressing.

Dynamic Earthquake Calculation

The dynamic earthquake calculation based on the multi-mode response spectrum method was implemented. To evaluate the effects of a seismic loading, response spectra can be defined, eigenmodes can be calculated and finally, the response spectra can be evaluated.

Calculation of Eigenvalues

The calculation of eigenvalues for evaluating the natural frequencies and eigenmodes for the dynamic earthquake calculation was implemented.

Evaluation of Response Spectrum

The evaluation of the response spectrum based on the calculated eigenmodes was implemented.

Combination Table

A clear tabular input for defining the load combinations was implemented. In this table load cases and envelopes can be superposed with their favourable and unfavourable factors and the respective superposition rules in various load combinations, which finally can be used for performing the design code checks.

Code-based design

The design code checks for ULS and SLS were enhanced and completed. This includes the design and checks due to shear, torsion and interaction, as well as the design and checks for crack width limitation and the stress checks.

Camber calculation

The required pre-camber of the structure for all calculated construction phases can now be calculated and output in an Excel sheet.

Material and time-dependent effects

The material and time-dependent effects (creep, shrinkage, relaxation) are now also available for the American, Chinese and Korean standard.

Allplan 2020-1-6, September 2020

Minor changes and fixes

Allplan 2020-1-5, August 2020

Minor changes and fixes

Allplan 2020-1-4, July 2020

Structural Members

It is now possible to correctly copy station tables of structural members (e.g. main girder) from an Excel-table also when using imperial units.

Allplan 2020-1-3, June 2020

Improvements and Fixes

The stability of the menu Superposition was improved: In certain cases, the product was not able to open the superposition view.

The compatibility for the cross-section calculation was extended: Cross-section properties for certain cross-sections created in the version 2019 and imported in the version 2020 were not able to be calculated.

The data transfer between Allplan Bridge and Allplan Engineering for tendons created by 3D tangents intersection points was improved.

Further smaller improvements

Allplan 2020-1-1, May 2020

Languages

Completion of Russian and Chinese language support for GUI, F1-Help and Documentation.

Allplan 2020-1-0, April 2020

General

Due to the additional implementations the user interface was enhanced.

Traffic Loads

A new task area for interactively and graphically defining traffic lanes based on the user-defined structure / cross-section (in 2D or 3D) was provided. Further, you can automatically create the lanes according to standard.

A new task area for defining load trains and for loading predefined load trains according to standard was provided.

A new tab was added in the menu Superpositions for performing an interactive, schematic evaluation and superposition of traffic loads (of the defined load trains and lanes).

A new calculation option for automatically calculating the influence lines of defined traffic load superpositions was added.

Design Code Checks

A new task area for performing various design code checks was provided including the following tasks:

ULSDESIGN: Perform the reinforcement design for the ULS for bending + normal force

ULSCHECK: Perform the check in the ULS for bending + normal force

LINSTRESS: Perform a linear normal stress check in the SLS

Respective new tasks for creating design reports (incl. graphical illustrations) in MS-Word format for each of the mentioned checks above are provided (i.e. DESIGNREPORT, CHECKREPORT, LINSTRESSREPORT).

Construction

A new task REMOVAL was implemented for deactivating temporary structural elements (such as auxiliary supports), which automatically calculates the redistribution of forces on the remaining static system.

A new task LOADREF was implemented for considering moving loads during the construction (e.g. form traveller) by referencing existing load cases without having to define them again.

Results

New tabs and task areas where added for displaying the results of influence lines and design code checks.

A new tab was added to graphically display the load definitions of defined load cases (load visualisation).

Material

A dialogue for selectively importing material from the Bimplus database was provided.

Cross sections

A new tool for drawing a parametric line parallel between two other lines with its position defined by a relative factor was implemented.

Tendons

A new method for defining tendons by tangent intersection points plus radius was developed.

Analysis

The calculation of creep, shrinkage and relaxation according to AASHTO LRFD was implemented.

View Options

Within the view of the 3D-model additional options are available for displaying only certain parts of the structure which can interactively be defined by the user by using the "isolation box" or the "hide objects" functionalities.

Bimplus

The analysis model can now be uploaded to Bimplus to exchange it with other connected applications.

Examples

The example Getting Stared and the corresponding document was revised and enhanced regarding the new functionalities.

Languages

General Availability of Russian and Chinese GUI language. Partially support of F1-Help and Documentation.

Allplan 2020-0-0, October 2019

General

Due to the additional implementations the user interface was enhanced.

Material

The connection to a material catalogue via Bimplus was established. There are several different types of material according to Eurocode at hand, such as concrete, reinforcement steel, pre-stressing steel etc. including all parameters required for static analysis.

Tendons

In Allplan Engineering you can now create drawings of tendons (developed view) from the tendons defined in the model in Allplan Bridge.

Remark: The assignment of the tendons (geometrically freely defined in space) to the beam elements for the static calculation is automatically done in consideration of the respective eccentricities.

New calculation option „Create analysis model"

The automatic generation of the analysis model from the geometrical model was implemented. This includes calculating the cross sections, creating the beam elements, assigning materials etc. By a further calculation option "Auto-Numbering" an automatic numbering of all generated beam elements and tendons is performed.

New calculation option "Autogenerate calculation tasks"

All calculation actions required for the static calculation are generated fully automatically from the defined tasks of the construction phases (i.e. activation of elements, load cases such as self-weight, prestress and creep and shrinkage).

New calculation option „Structural analysis"

A global static analysis based on the Bernoulli beam theory is performed for all automatically and manually generated calculation tasks defined previously in the construction phases. The analysis is enhanced to accurately consider the cross-section variation. Furthermore, the nonlinear calculation of time dependent effects is performed, considering design code formulas (Eurocode).

Construction

The calculation task LOADCASE with assigned load types was implemented to define all kinds of additional loads (such as temperature, wind etc.).

Additional calculation tasks for the manual input of the calculation actions were added.

Cross sections (Superimposed dead load)

A new structural unit of the type load was implemented to automatically retrieve the weight and the position of superimposed dead loads (such as roadway, curbs etc.) from the geometrical definitions of the cross section.

Superpositions

In the navigation window a new submenu in the menu Analysis was added for performing an interactive, schematic superposition of load cases in envelopes.

Results

A new main menu was added to the navigation tree as well as a new tab in the action bar for the graphical and tabular display of load case results.

Examples

The example Getting Stared and the corresponding document was revised and enhanced regarding the new functionalities.

Allplan 2019-1, April 2019: latest Update Allplan 2019-1-0

General

Due to the additional implementations the user interface was enhanced and reorganised.

Cross section

The tool 'external boundaries' was added. When you define cross sections, this tool allows you to include arbitrary boundaries of other already defined cross sections and to copy and arrange them in an easy manner. One practical example would be the modelling of longitudinal stiffeners in steel cross sections along the inner perimeter.

In the Property window a new option for assigning a thickness to a boundary for an easier definition of thin-walled cross sections was added.

A new option 'Auto extrusion' for boundaries for an automatic intersection with other boundaries was added.

Two additional drawing tools for parametric lines were added: 'Parallel line by direction' (the distance can be measured in an arbitrary direction (e.g. vertically), 'Line by relative angle' (angle relative to an arbitrary line).

When drawing parametric lines by angle you can now input the angle also in percent (e.g. for defining the crossfall of the cross section).

A new variable of the type 'Angle in percent' was added, so that you can now define the table to be assigned also in percent.

Constructions

A new task for defining the construction phases was added. This allows you to define and graphically simulate the construction phases of the bridge including all detailed work steps / tasks and present them in a Gantt chart (bar chart of the construction). When exporting the geometrical model to ALLPLAN the information of the defined construction phases is considered by means of separate 3D solids.

Materials

A new menu 'Materials' was added to the Project Navigation where you can define standards, materials and material values. A connection to a database is scheduled for the version 2020-0, autumn 2019.

Structural members

An option for copying piers was added.

Bimplus

You can now import axis in LandXML format in Bimplus. These axes you can import in Allplan Bridge.

View options

In the View window of the 3D model you can now set numerous options for drawing the particular objects via the Property window.

Layer

The functionalities of Layers were enhanced by further object types of the cross section.

Examples

Three new examples were added to the program library: Reinforced plate with two circular voids, Wildlife crossing, Steel-concrete composite bridge with stiffeners

Analysis: Cross sections (Technical preview)

Calculation of the cross section properties of the cross sections defined in the project and graphical presentation of the shear stress distribution of the cross section and in arbitrary cuts of the cross section.

Tendons

The modelling of parametric tendons was implemented.

The definition of tendon stressing and the calculation of the prestressing losses were implemented.

Cross section

The parametric modelling was extended from Allplan Bridge to Allplan by the 'Smart placements', which you can use to reference objects of the project library in Allplan.

You can now copy cross sections.

You can now import and export cross sections.

A new tool for measuring distances between parametric lines and points was added.

A new tool for defining point grids was added, which you can use to easily define the positions of the tendons within the cross section.

Layer

The functionalities of Layers were implemented for parametric lines in the cross section definition

Variations

You can now copy tables and formulas.

Axis / Variations / Variables

A calculation function for automatically evaluating the distance between two axes was implemented. With this you can e.g. automatically consider a variable cross section width by defining a secondary axis.

Allplan 2018-1, April 2018: latest Update/Hotfix Allplan 2018-1-5

General

First version featuring the complete modelling of the parametric bridge model

Axes

Creating parametric axes in 3D (by defining plan and elevation)

Cross sections

Constructing parametric cross sections with user-defined variables and arbitrary geometry

Structural members

Setting up a parametric 3D model created by combining axes and cross sections

Variations

Definition of the variation of cross section dimensions by tables and formulas

ALLPLAN

Full-featured data import in Allplan