LUSAS 20.0 Error Fix and Modification Release Notes

This document lists modifications, other than the New Features in 20.0, that have been made since LUSAS 19.1-3 and is correct as of 28th Nov 2022

Version 20.0-0c8 Built 28th Nov 2022

This installation is built with all revisions to r40900 (including LNG r3341 and MBW r431) plus 41144, 41186, 41228, 41309, 41636-41643 and is referred to as r41643.

Known new issues
These notable issues are known to be present in V20.0-0c8 and not present in v19.1-3

Masonry Bridge Wizard > Create model > 2D linear leaves the model with window refresh manual and treeviews locked (30751) **Workaround:** Close Modeller, reopen and reload the file
A graph through 2d ignores the specified loadcase(s) and always plots the active loadcase (30662) **Workaround:** Change the active loadcase to suit
Model with VLO custom vehicles saved in V19.1 doesn't open in later versions (30714) **Workaround:** Open in v19.1-3, use the "export model data" facility to export VLO vehicles. Delete all VLO custom vehicles. Save the model. Open the model in V20 and import the model data to recreate the VLO vehicles.

LUSAS Modeller 20.0-0 (r40900)

Unchanged from v20.0-0c7 – see below.

LUSAS Solver 20.0-0 (r7469)

Errors fixed
The following critical, major or minor issues are fixed in V20.0-0c8 (in addition to those in v20.0-c7).

Eigenvalue buckling analysis unexpectedly includes large deformation theory in joint elements (30833)
"Convert assigned loading to mass" does not work in Eigenvalue analysis with nonlinear controls (30708)
Fatal database errors preventing eigenvalue buckling analysis with multiple loadcases from solving (30459)
Results loaded into Modeller do not include all loadcases when a large number of target stresses have been set (28914)
Using shell elements in a hygro-thermal model leads to a system error (28088)

A number of fixes for cosmetic or speed issues are also provided in V20.0. Users with a reference number provided by LUSAS Customer Support may identify these from the following list:

30256, 29031

Version 20.0-0c7 Built 24th Oct 2022

This installation is built with all revisions to r40900 (including LNG r3341 and MBW r431) plus 41144, 41186, 41228, 41309 and is referred to as r41309.

LUSAS Modeller 20.0-0 (r40900)

Errors fixed

The following critical, major, minor or speed issues are fixed in V20.0
Those marked * are not found in v19.1-3 or earlier version of the software – only in v20.0 beta

Unable to enter real numbers when using regional settings with comma decimal separator* (30625)
Beam stress is incorrectly computed when an envelope is inside a combination, and the primary component is the same as the display component (30476)
Extra elements created when assigning a line joint mesh to edges of a surface which already has a surface joint mesh (30469)
Issue with importing a particular DXF file (30445)
Problems exporting IFC for a particular model in the Chinese version (30424)
Contour properties dialog; entity 'Beam/ shell slice resultants' is not recognised in the Chinese version (30360)
Modeller closes unexpectedly during tabulation of an analysis using inherited deformed mesh coordinates together with constraint equations (30351)
Masonry Bridge Wizard can create overlapping surfaces/volumes at piers* (30344)
Transverse limits for the SV-TT vehicle in Vehicle Load Optimisor's CS 458 implementations should be 1.75m (not 1.85m) (30343)
'Fatal database error in routine dbget' for user defined results that involve unaveraged principal stresses (30338)
Adding a vehicle to the Vehicle Load Optimiser's CS 458 STGO/SO library sets the DAF factors for the existing vehicles to zero (30322)
VLO gives a <Failed assigning an instance of 'Vehicles.Factor' to the object Axle1> when using CS 458 implementation (30318)
No warning message when elements with orthotropic materials are sliced if previously inactive and slice results viewed on prior loadcase (30314)
Illegal mix of stress models in tendon assignment' error obtained when using tendon loading in coupled structural/thermal model (30303)
Unhandled exception when creating a Reference Path greater than 68,000 units long (30299)
Drag and drop loadcase (to reorder) leaves branch connected to the wrong loadcase (30296)
System error (WDCSG) when using Standard Section Property Calculator with extreme dimensions (30269)
Difficulty selecting some surfaces without use of advanced selection tool (30263)
Modeller closes unexpectedly after creating an additional cable tuning analysis (30212)
'Cable tuning - a loadcase, load curve, analysis or branch with the given name already exists' message appears in error (30209)
Merging two models may fail depending on the order of opening (30183)
Deassigning equivalence attribute from surfaces fails in a particular model (30182)
Slow plotting Values for a combination containing IMD loadcases in a large model (30178)

'Fatal database error detected in routine spelrs' when setting active an IMD loadcase in a model where limited element output has been selected (30176)
Splitting more than 100 line features with a single command fails (30156)
Unexpected prestress losses computed when using context menu rather than the 'Solve Now' button (30098)
Corridor averaging for Graph through 2D does not respect the specified extent (30081)
Graph through 2D projection option (e.g. vertically) lost after model is closed and reopened (30080)
Splitting a line is very slow in a large model with many assignments (30056)
Deformed mesh can be wrong when contours layer is showing transformed displacements (30044)
Modeller closes unexpectedly while changing results or active loadcase (30024)
Results at inspection locations are shown only after the whole model has been set as visible at least once (30021)
Slow post-processing nested envelopes and combinations (30014)
Assignment of Bridge Deck (Grillage) Geometric Attribute to an analysis does not automatically override the geometric attribute assignment of the base analysis (29962)
Load Curve option is missing on Graph Wizard dialog for a Hygro-Thermal analysis. (29960)
Classes of cement type of material Concrete (Nonlinear) - dialog not working properly (29949)
Influence values obtained via LPI are incorrectly 'N/A' when values may be obtained through the Modeller interface (29923)
RC Frame Results loadset - Apply/OK button remains disabled after changes to certain check boxes (29921)
Prestress calculation can use the wrong cement type in the calculation of creep and shrinkage losses (29902)
Deleting a Vehicle Load Optimisation run takes a very long time (29887)
Deactivated mesh is incorrectly shown at the start of a Restart analysis (29886)
Print Results Wizard runs out of memory for averaged results with a complicated nested combination/envelope, and setting the extent to a group (29885)
Modeller closes unexpectedly when the grid is cleared in the Line Reinforcement Dialog (29883)
'Database error - Internal File name specified too long' occurs in a Branch Analysis with some loadcases marked 'not to solve' (29878)
MIDAS V9 file import fails (29857)
Line reinforcement dialog - Copy/Paste causes errors in the 'stretch to fit' column (29846)
Multiple varying sections fail to tabulate when used with cross section beam elements (29840)
Section reinforcement dialog should require some rebar, else RC Frame design cannot proceed (29838)
Modeller closes unexpectedly when assigning joints under a particular set of circumstances (29831)
Assignment of a mesh attribute in an analysis other than the base analysis should be illegal in LPI (as it is in the Modeller interface) (29796)
Saved view with named envelope in report - Primary component data lost after closing model (29790)
Variation with UDL and range in use may apply incorrect total load (29777)
Initial stress/strain loading not working with joints for semiloof beams (29765)
Loading applied to deactivated elements in branch analysis (29733)
Unexpected results when using temperature load and rigid zones in beam elements (29655)

Assignment of a design attribute to a combined line should be illegal in LPI (as it is in the Modeller interface) (29476)
Trilinear earth pressure material units of weight display as kN/m^2 (rather than kN/m^3) (29391)
Attributes > Material > Joint dialog is very slow to launch (29327)
Steel Composite bridge deck wizard closes unexpectedly due to the presence of a bridge deck (grillage) material (29286)
Design combination for EN1990 Highway Bridges Italy Set C incorrectly includes value of 1..15 instead of 1.15 (29285)
Design combination for EN1990 Highway Bridges UK Set C has incorrect partial factor used for wind and thermal actions (29278)
'Failed to create openGL rendering context' when using remote desktop or certain hardware configurations (29235)
Eigenvalue buckling analysis with two loadcases fails with system errors (29218)
Attributes > Loading dialog is very slow to launch (29201)
RC slab design gives incorrect results for SLS Maximum crack width (CSA-S6-14) when in-plane forces are present (29167)
The message 'Number of edge intersection is incorrect' is incorrectly shown when using beam/shell slice resultants in certain models (29138)
ABAQUS file (.inp) import fails for newly introduced ABAQUS elements (29103)
Slow deleting load combinations once results have been loaded (28985)
LNG: Age attributes are assigned only to the visible model in 3D base model for design check (28948)
Model with 7000 elements and 1000 loadcases takes disproportionately long to open (28942)
Model with 18000 joints, each with different material properties, takes an excessively long time to open (28939)
Precast section UK/EU U3 Beam incorrectly has width of 1208mm instead of 1280mm (28815)
Cycle Relative appears to take a long time to execute (28751)
Modeller closes unexpectedly after moving geometry (during creation of interface elements) (28532)
Design combinations for AASHTO should include temperature gradient for combinations which don't have live loading (28518)
Contour 'Loading (model) - Dst' for local distributed loading is incorrect on BMI31 elements (28488)
Section through 3D slice includes nodes outside slice plane (due to tolerance issue) (28478)
CSA S6-14 steel design uses incorrect steel grades for some section profiles and fabrications (28371)
Loadcases created by the moving load generator are very slow to delete (28314)
Copying features with assignments gets progressively slower as the number of features in the model increases (28300)
Profile variations not available in plastic material properties (28062)
Cannot taper Arbitrary Sections with modular ratios (27923)
Equivalence of unmergable features should be controlled by equivalenceUnmergables option (27815)
Difficulty creating coincident joint mesh with different primary and secondary features (for deactivation purposes) (27813)
Slow displaying results when changing which elements are visible, when caching set to 'cache everything, even when looking at a subset of the model' (27744)
Arbitrary section property calculator can give incorrect properties for hollow section formed using line features and an assigned thickness (27731)

Time taken to move meshed model is longer than expected (27698)
Unable to taper between sections defined by 'enter properties' option (rather than library sections) (27527)
Contours of a derived result (such as SE or RSLT) for quadratic elements can be incorrect in the element centre (27507)
Temperature dependent properties do not work with creep and shrinkage materials (27502)
Function limits in Face load leads to inaccurate loading (27500)
CSA-S6 crack width calculation is incorrect for slabs with in-plane forces (27355)
BS5400 Crack width calculation is incorrect for slabs in pure tension (27353)
BS8110 Crack width calculation is incorrect for slabs in pure tension (27352)
Error in K-factor for BD21 in Bridge loading Library (27243)
Automatic equivalence merges nodes of features that have been made unmergable (26945)
Slow displaying design results based on smart combinations (26486)
Materials attribute property values cannot be viewed once temperature dependency has been added (26455)
Interface friction elements do not work when lines share a common node (26387)
Showing multiple values at each node can be misleading, because (when zoomed out) the results appear to be in the wrong place (25916)
Slow displaying design results based on envelopes (25666)
Changing the load factor in a loading assignment, when the same load has already been assigned in the same loadcase with a different factor, is unexpectedly slow (25544)
Arbitrary section property calculator not working on a section with an intercept (25451)
Selecting a node or element by clicking on it or boxing it is slow in a large model (25445)
Wrong assignment removed when deassigning a loading assignment which has a duplicate in the same loadcase (25013)
IFC export fails with 'The parameter is incorrect' message (23582)
Volume mesh and irregular interface mesh on face of the solid are incompatible (24118)
Both assignments copied when copying a loading assignment which has a duplicate in the same source loadcase (22701)
Arbitrary Section Property Calculator creates unnecessary structural analysis for mixed material sections (19270)
Save from Print Results Wizard to Excel is very slow in a model with a large number of loadcases (19183)
Arbitrary section property calculator does not work for sections with circular holes if the circle surfaces are defined by one line only (17510)

A number of fixes for cosmetic issues, documentation issues, installation issues, and development requests are also provided in V20.0-0. Users with a reference number provided by LUSAS Customer Support may identify these from the following list:

30467, 30440, 30390, 30376, 30368, 30359, 30357, 30355, 30345, 30327, 30324, 30320, 30305, 30284, 30255, 30181, 30178, 30131, 30118, 30083, 30070, 30056, 30040, 30014, 29996, 29986, 29983, 29979, 29963, 29922, 29874, 29859, 29815, 29813, 29807, 29789, 29782, 29770, 29764, 29720, 29668, 29617, 29596, 29575, 29561, 29537, 29496, 29464, 29463, 29456, 29447, 29386, 29374, 29340, 29327, 29309, 29283, 29276, 29201, 29188, 29177, 29173, 29147, 29052, 28985, 28976, 28962, 28942, 28939, 28923, 28847, 28779, 28765, 28753, 28751, 28734, 28729, 28637,

28415, 28397, 28391, 28354, 28352, 28333, 28324, 28314, 28300, 28271, 28253, 28233, 28177, 28121, 28077, 28072, 28058, 28008, 28007, 28006, 27968, 27873, 27850, 27842, 27784, 27759, 27756, 27744, 27727, 27678, 27567, 27550, 27525, 27460, 27434, 27368, 27362, 27358, 27320, 27290, 27275, 27233, 27156, 27120, 27082, 27039, 26950, 26922, 26810, 26734, 26733, 26731, 26724, 26647, 26623, 26615, 26486, 26402, 26381, 26343, 26322, 26319, 26285, 25984, 25951, 25937, 25838, 25782, 25702, 25666, 25550, 25531, 25522, 25453, 25445, 25221, 24437, 24381, 24271, 24176, 24141, 23903, 23790, 23511, 23330, 23030, 22811, 22396, 22157, 22062, 21916, 21573, 21298, 21039, 20786, 20350, 20336, 20157, 20125, 18919, 18777, 17917, 17740, 17715, 17136, 17098, 17049, 16970, 16592, 16389, 16310, 15536, 15468, 15436, 15422, 15398, 15293, 14952, 14840, 13971, 13736, 13457, 11864, 11819, 11030, 10804, 10164, 10020, 9937, 9519, 9130, 6275, 4975, 4974, 4886, 4153, 3971, 2983, 2557, 862

LUSAS Solver 20.0-0 (r7423)

Errors fixed

The following critical, major or minor issues are fixed in V20.0-0.

64 bit Solver returns error 157 under certain circumstances (while 32 bit Solver runs OK) (30108)
Invalid number error reported when using the non-recoverable trilinear earth pressure joint with angle of shearind resistance between soil and structure set to zero (30071)
Error when trying to use Mohr Coulomb (Model 65) with Viscoelastic material properties (29950)
Section property modifier prevents Eigenvalue analysis from running (29835)
Extrapolation of PROFILE SETS can cause interpolation errors (28822)
Transient porewater pressures revert to steady state before phi-c analysis (28811)
No error message if saturation/permeability curves are input starting with negative P and increasing thereafter (28756)
Stiffness in Duncan-Chang material incorrectly fixed in viscous and consolidation analyses (28530)
Solution fails when using a piecewise linear joint material with a different number of data points in u and v curves (28516)

A number of fixes for cosmetic or speed issues are also provided in V20.0. Users with a reference number provided by LUSAS Customer Support may identify these from the following list:

30403, 30402, 29658, 29387, 28760, 28468, 26263, 2442