

<b>Product/Version or Task:</b>	GSA 8.3.1
<b>Test Plan and Certificate Revision:</b>	1

**Software/Documentation Components Used In Tests:**

Component	Version
GSA	8.3.1.11
AdcData	30.38.1.11
AdFile	30.38.1.11
GdSpec	8.3.1.11
GSA_DES_BS5950_1_2000	8.3.1.11
GSA_DES_LRFD3	8.3.1.11
GSA_DES_Rc2D	8.3.1.11
GSA_DES_StressCheck	8.3.1.11
Gsa_Export_Cad	8.3.1.11
Gsa_Import_Cad	8.3.1.11
Gsa_Export_dxf	8.3.1.11
Gsa_Import_dxf	8.3.1.11
GsAdc	8.3.1.11
GsBridge	8.3.1.11
GsCheck	8.3.1.11
GsEnvelope	8.3.1.11
GsExport	8.3.1.11
GsFile	30.38.1.11
GsGraph	8.3.1.11
GsPrivate	8.3.1.11
GsRaft	8.3.1.11
GsRelax	8.3.1.11
GSS	30.38.1.11
GsTable	8.3.1.11
GwDat	30.38.1.11
OaBase	30.38.1.11
OaRaft	30.38.1.11
OaSect	30.38.1.11
OaSteelDesUtil	30.38.1.11
OaUtil	30.38.1.11
OaWin	30.38.1.11
StepFile	8.3.1.11
VDDCal	30.0.1.0
WaveLoad	8.3.1.11

**Verification**

**1 Requirements**

Test Plan			Testing Completed By
Item	Required (Yes/No)	Description	
1.1	✓	The Change Log should identify changes in this version.	CK

1.2			
1.3	✓	Version expiry and copy protection should be built into the code.	CK
1.4			

**2 Design**

Test Plan			Testing Completed By
Item	Required (Yes/No)	Description	
2.1			
2.2			
2.3			
2.4	✓	Ensure that included tasks are documented and fixed NCRs cross reference code changes.	CK
2.5	✓	Ensure that security system (ref. 1.3) is functioning correctly.	CK

**3 Code**

Test Plan			Testing Completed By
Item	Required (Yes/No)	Description	
3.1	✓	Satisfy that coding standards are met.	CK
3.2	✓	Satisfy that configuration standards are met.	CK
3.3			
3.4			

**4 Integration**

Test Plan			Testing Completed By
Item	Required (Yes/No)	Description	
4.1	✓	Carry out installation tests.	CK

**5 Documentation**

Test Plan			Testing Completed By
Item	Required (Yes/No)	Description	
5.1	✓	Ensure that online help/manual, change log and web site are updated.	CK
5.2	✓	(as 5.1)	CK

**6 Development Outputs**

Test Plan			Testing Completed By
Item	Required (Yes/No)	Description	
6.1		<del>Outputs should be reviewed at design review.</del> (outputs reviewed by clients at beta testing)	
6.2	✓	Associate required functionality with software components.	CK

		Ensure that NCRs identified in the Release Notes have been addressed.																																																																											
6.3	✓	Compare results with benchmark.	(see 6.4.2 table)																																																																										
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6.4.2	✓	<p>Carry out final code integration tests as detailed in the table below.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2"><b>General User Interface Tests</b></td> </tr> <tr> <td colspan="2">Graphics</td> </tr> <tr> <td colspan="2">Context sensitive menus</td> </tr> <tr> <td colspan="2">Selection sets</td> </tr> <tr> <td colspan="2">Cut and paste</td> </tr> <tr> <td colspan="2">Report view options</td> </tr> <tr> <td>Comments :</td> <td>CK</td> </tr> <tr> <td colspan="2"><b>Table Tests</b></td> </tr> <tr> <td colspan="2">Simple table (e.g. axes)</td> </tr> <tr> <td colspan="2">Multi-page, multi-view table (e.g. nodes)</td> </tr> <tr> <td colspan="2">Multi-page, multi-module table (e.g. loads)</td> </tr> <tr> <td colspan="2">Multi-page, multi-record table (e.g. alignments)</td> </tr> <tr> <td colspan="2">Table with results</td> </tr> <tr> <td colspan="2">Copy to/paste from spreadsheet</td> </tr> <tr> <td colspan="2">Cut/copy/paste in table</td> </tr> <tr> <td colspan="2">Table edit options (e.g. find, modify)</td> </tr> <tr> <td colspan="2">Table data options (e.g. units, wizards)</td> </tr> <tr> <td>Comments</td> <td>SH</td> </tr> <tr> <td colspan="2"><b>GsRaft Table Tests</b></td> </tr> <tr> <td colspan="2">Simple table (e.g. soil zones)</td> </tr> <tr> <td colspan="2">Multi-page (e.g. soil profiles)</td> </tr> <tr> <td colspan="2">Table with results</td> </tr> <tr> <td colspan="2">Copy to/paste from spreadsheet</td> </tr> <tr> <td colspan="2">Cut/copy/paste in table</td> </tr> <tr> <td colspan="2">Table edit options (e.g. find, modify)</td> </tr> <tr> <td>Comments :</td> <td>TL</td> </tr> <tr> <td colspan="2"><b>Pre-processing Tests</b></td> </tr> <tr> <td colspan="2">Mesh generation</td> </tr> <tr> <td>Comments :</td> <td>CK</td> </tr> <tr> <td colspan="2"><b>Post-processing Tests</b></td> </tr> <tr> <td colspan="2">Axes</td> </tr> <tr> <td colspan="2">Enveloping</td> </tr> <tr> <td colspan="2">RC slab design</td> </tr> <tr> <td colspan="2">RC member design</td> </tr> <tr> <td colspan="2">Strain energy density</td> </tr> <tr> <td colspan="2">Steel design code checks</td> </tr> <tr> <td colspan="2">Bridge load optimisation</td> </tr> </table>	<b>General User Interface Tests</b>		Graphics		Context sensitive menus		Selection sets		Cut and paste		Report view options		Comments :	CK	<b>Table Tests</b>		Simple table (e.g. axes)		Multi-page, multi-view table (e.g. nodes)		Multi-page, multi-module table (e.g. loads)		Multi-page, multi-record table (e.g. alignments)		Table with results		Copy to/paste from spreadsheet		Cut/copy/paste in table		Table edit options (e.g. find, modify)		Table data options (e.g. units, wizards)		Comments	SH	<b>GsRaft Table Tests</b>		Simple table (e.g. soil zones)		Multi-page (e.g. soil profiles)		Table with results		Copy to/paste from spreadsheet		Cut/copy/paste in table		Table edit options (e.g. find, modify)		Comments :	TL	<b>Pre-processing Tests</b>		Mesh generation		Comments :	CK	<b>Post-processing Tests</b>		Axes		Enveloping		RC slab design		RC member design		Strain energy density		Steel design code checks		Bridge load optimisation		CK
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		<p>Comments :</p> <p>Zero factors are now listed explicitly in permutation descriptions (NCR 2682). C1/Von Mises minimums and C2 maximum are omitted (NCR 1746). Additional table of beam strains. Output axes are not reported for strain energy density. Strain energy density is reported in energy density units (default J/m<sup>3</sup>); users may have to set an energy unit to make it the same.</p>	<p>TL (bridge load)</p> <p>R (steel design)</p> <p>AS (RC2D)</p> <p>AS (RCmem)</p> <p>AH (other)</p>
		<p><b>Design Interface Tests</b></p> <p>RC slab design</p> <p>RC member design</p> <p>Steel design</p>	
		<p>Comments :</p>	<p>AS (RC2D)</p> <p>AS (RCmem)</p> <p>R (steel design)</p>
		<p><b>GSS Tests</b></p> <p>Static</p> <p>Static P-delta</p> <p>Modal dynamic</p> <p>Modal P-delta dynamic</p> <p>Ritz</p> <p>Ritz P-delta</p> <p>Buckling</p> <p>Mass</p>	
		<p>Comments :</p>	<p>SH</p>
		<p><b>GsRelax Tests</b></p> <p>Static</p> <p>Static with buckling</p> <p>Static non-linear</p> <p>Static non-linear with buckling</p> <p>Miscellaneous</p>	
		<p>Comments :</p>	<p>TL</p>
		<p><b>GsSpec Tests</b></p> <p>Response spectrum analysis</p> <p>Harmonic analysis</p> <p>Periodic load analysis</p> <p>Time history analysis</p> <p>Footfall analysis</p>	
		<p>Comments :</p>	<p>SH (RespSpec)</p> <p>TL (other)</p>
		<p><b>GsRaft Tests</b></p> <p>Soil-structure interaction</p>	
		<p>Comments :</p>	<p>TL</p>

<p><b>Bridge Tests</b></p> <p>Influence analysis</p>	<p>Comments :</p>	<p>TL</p>
	<p><b>Analysis Envelope Tests</b></p> <p>Analysis envelopes</p>	
		<p>AH</p>
	<p><b>3<sup>rd</sup> Party Software Interaction</b></p> <p>CAD i/o</p> <p>GsRevit</p>	
		<p>CK (prelim.) R</p>

**Validation**

**Test Plan:**

External review by nominated beta testers. (~~External review not required for this version.~~)

**Testing Completed By**

**Comments:**

4.1 See file <GF62 6 Release Installation Test Report.doc>

**Conclusions:**

GSA 8.3.1 has satisfied all verification tests.

**Test Plan**

<b>Task Manager</b>	Chris Kaethner	<b>Date</b>	23 June 2008
<b>Product Director</b>	Chris Kaethner	<b>Date</b>	23 June 2008

**Test Certificate**

<b>Task Manager</b>	Chris Kaethner	<b>Date</b>	24 June 2008
<b>Accepted For Release (Yes/No)</b>	Yes		
<b>Product Director</b>	Chris Kaethner	<b>Date</b>	24 June 2008

Notes

- (1) For descriptions of verification items see the corresponding items in Procedure GP36 (Software Verification and Validation).
- (2) Refer to procedures, data files, instances of GF62.1 Test Report, and testers where appropriate.
- (3) Identify operating systems.