AASHTOWare Bridge Rating and Design Training - (BrR/BrD 6.4)

General Preferences

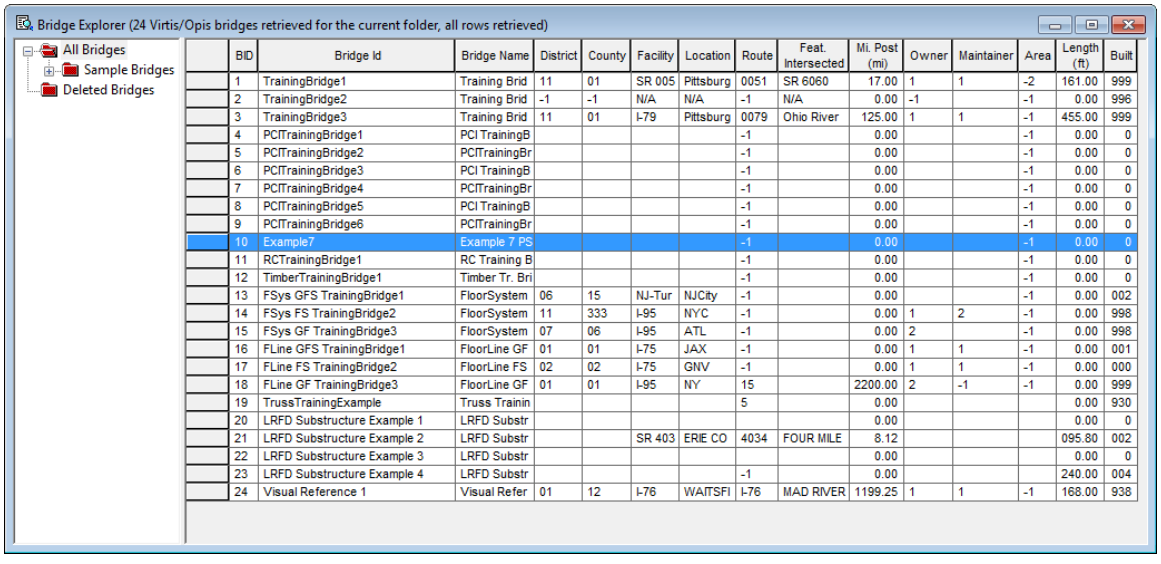
Topics Covered

- General preference setting for Ignore shear.
- General preference setting for Impact Factor.
- Apply General Preference template for single/multiple bridges.
- Making General preference template as default.
- Applying General Preferences during analysis.

The General Preferences feature is an usability enhancement that allows user to:

- Create, save and export/import agency-wide and user-specific preferences.
- Set preferences as system default.
- Apply preferences anytime to the bridge in the Bridge Workspace.
- Apply preferences to a bridge or group of bridges in the Bridge Explorer.
- Apply preferences during the analysis

General Preferences are intended to allow a user to override specific settings or data for a bridge or group of bridges for an analysis without having to edit each specific data item for each bridge.



	BID	Bridge Id	Bridge Name	District	County	Facility	Location	Route	Feat. Intersected	Mi. Post (mi)	Owner	Maintainer	Area	Length (ft)	Built
	1	TrainingBridge1	Training Brid	11	01	SR 005	Pittsburg	0051	SR 6060	17.00	1	1	-2	161.00	999
	2	TrainingBridge2	Training Brid	-1	-1	N/A	N/A	-1	N/A	0.00	-1		-1	0.00	996
	3	TrainingBridge3	Training Brid	11	01	I-79	Pittsburg	0079	Ohio River	125.00	1	1	-1	455.00	999
	4	PCITrainingBridge1	PCI TrainingB					-1		0.00			-1	0.00	0
	5	PCITrainingBridge2	PCITrainingBr					-1		0.00			-1	0.00	0
	6	PCITrainingBridge3	PCI TrainingB					-1		0.00			-1	0.00	0
	7	PCITrainingBridge4	PCITrainingBr					-1		0.00			-1	0.00	0
	8	PCITrainingBridge5	PCI TrainingB					-1		0.00			-1	0.00	0
	9	PCITrainingBridge6	PCITrainingBr					-1		0.00			-1	0.00	0
	10	Example7	Example 7 PS					-1		0.00			-1	0.00	0
	11	RCTrainingBridge1	RC Training B					-1		0.00			-1	0.00	0
	12	TimberTrainingBridge1	Timber Tr. Bri					-1		0.00			-1	0.00	0
	13	FSys GFS TrainingBridge1	FloorSystem	06	15	NJ-Tur	NJCity	-1		0.00			-1	0.00	002
	14	FSys FS TrainingBridge2	FloorSystem	11	333	I-95	NYC	-1		0.00	1	2	-1	0.00	998
	15	FSys GF TrainingBridge3	FloorSystem	07	06	I-95	ATL	-1		0.00	2		-1	0.00	998
	16	FLine GFS TrainingBridge1	FloorLine GF	01	01	I-75	JAX	-1		0.00	1	1	-1	0.00	001
	17	FLine FS TrainingBridge2	FloorLine FS	02	02	I-75	GNV	-1		0.00	1	1	-1	0.00	000
	18	FLine GF TrainingBridge3	FloorLine GF	01	01	I-95	NY	15		2200.00	2	-1	-1	0.00	999
	19	TrussTrainingExample	Truss Trainin					5		0.00				0.00	930
	20	LRFD Substructure Example 1	LRFD Substr							0.00				0.00	0
	21	LRFD Substructure Example 2	LRFD Substr			SR 403	ERIE CO	4034	FOUR MILE	8.12				095.80	002
	22	LRFD Substructure Example 3	LRFD Substr							0.00				0.00	0
	23	LRFD Substructure Example 4	LRFD Substr					-1		0.00				240.00	004
	24	Visual Reference 1	Visual Refer	01	12	I-76	WAITSFI	I-76	MAD RIVER	1199.25	1	1	-1	168.00	938

Fig 1. Bridge Explorer

From the Bridge Explorer (Fig 1) select Example 7 (BID 10) and double click (or right click and select open) to open it.

Once the Bridge Workspace tree shows up, expand “6- girder system” under “SUPERSTRUCTURE DEFINITIONS” in the tree by clicking on “+” . Then expand “MEMBERS” and select “G2”. Expand “G2” and select “Interior Member (E)(C)” under “MEMBER ALTERNATIVES”. Expand “Interior Member (E)(C)” by clicking on the “+”. Then the Bridge Workspace tree will be as shown in Fig 2.

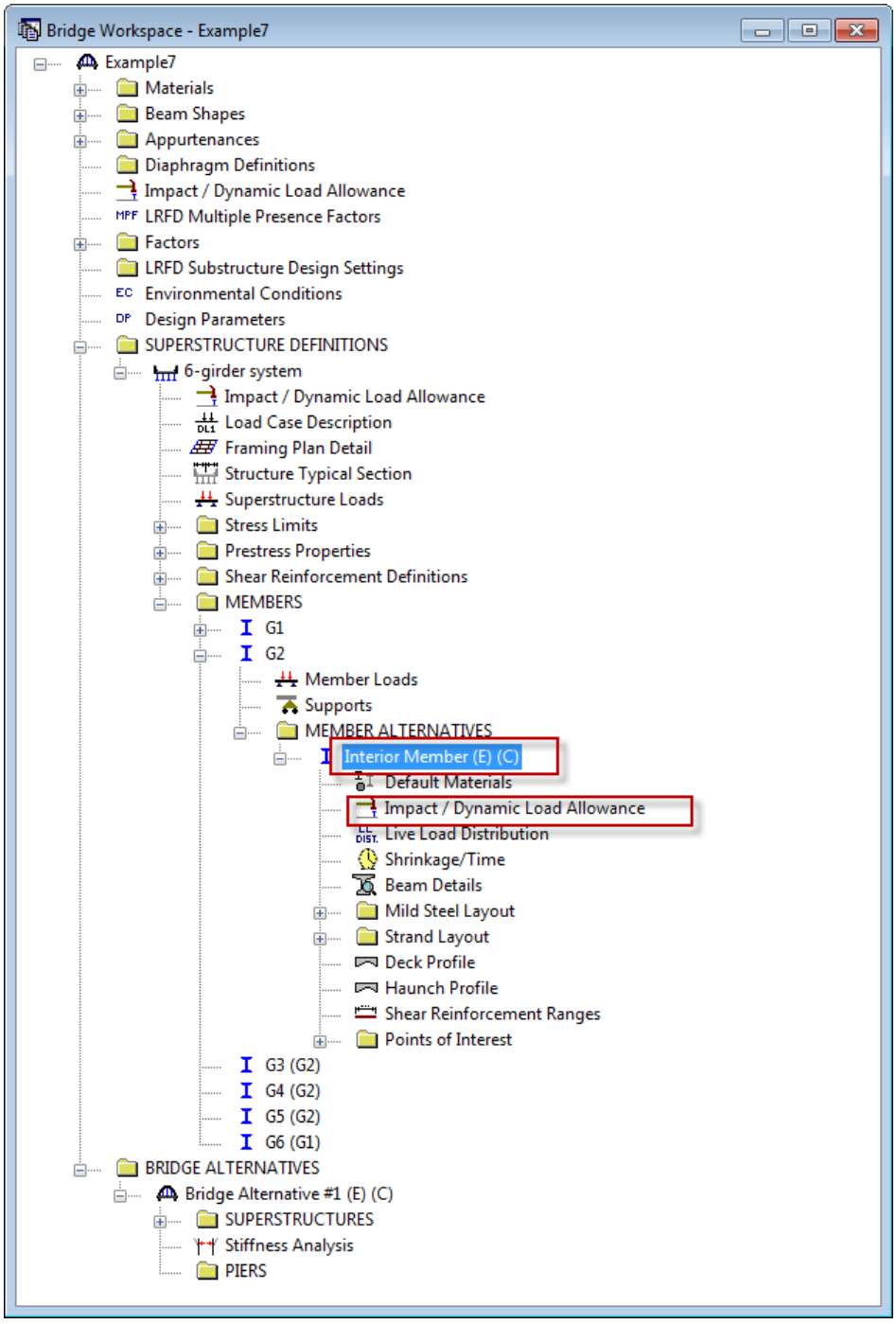


Fig 2. Bridge Workspace Tree - G2, Girder Member Alternative

Double click on “Interior Member (E) (C)” to open Member Alternative Description window. On this window go to Control Options tab (Fig 3). On this Control Options tab under LRFD settings, General Procedure – Appendix B5 is selected as Shear Computation Method. Now click on “Cancel” button to close window.

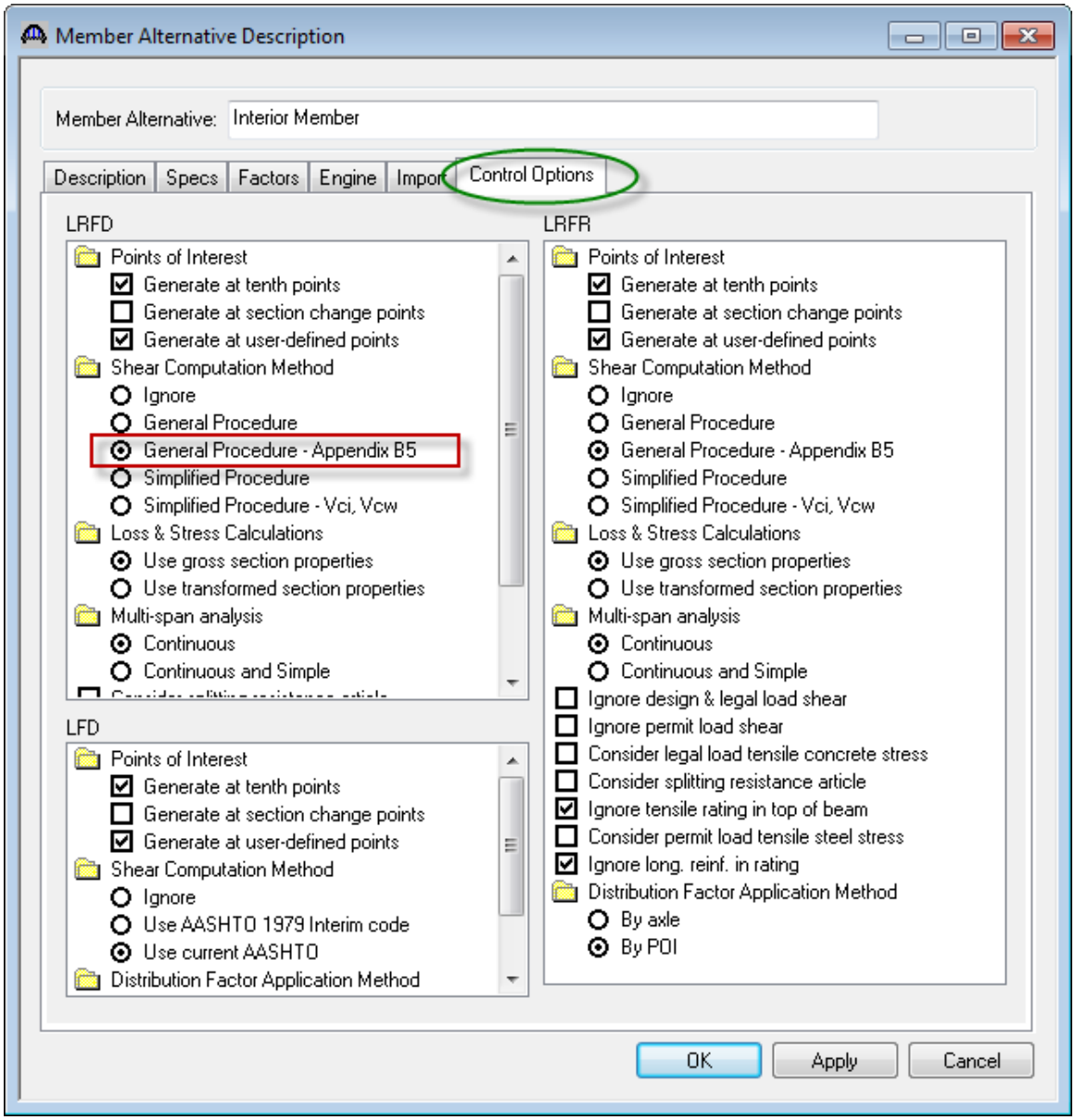


Fig 3. Member Alternative Description Window - Control Options Tab

Go to Impact/ Dynamic Load allowance under Interior Member (E) (C) in Bridge Workspace tree. Double click on it to open Member Alternative Impact/ Dynamic Load allowance window. In this window Standard Impact Factor is to be used. Click on “Cancel” button to close the window.

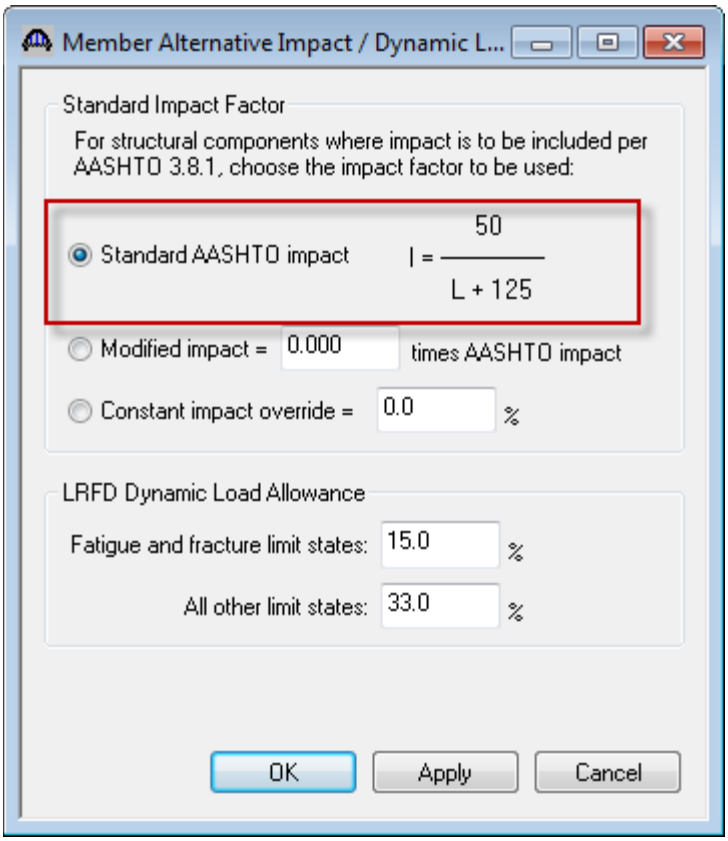


Fig 4. Member Alternative Impact/ Dynamic Load Allowance Window

Now go to toolbar and select General Preferences button (Fig. 5). Double click on this button to open the General Preferences window.

Fig 5. General Preferences Button

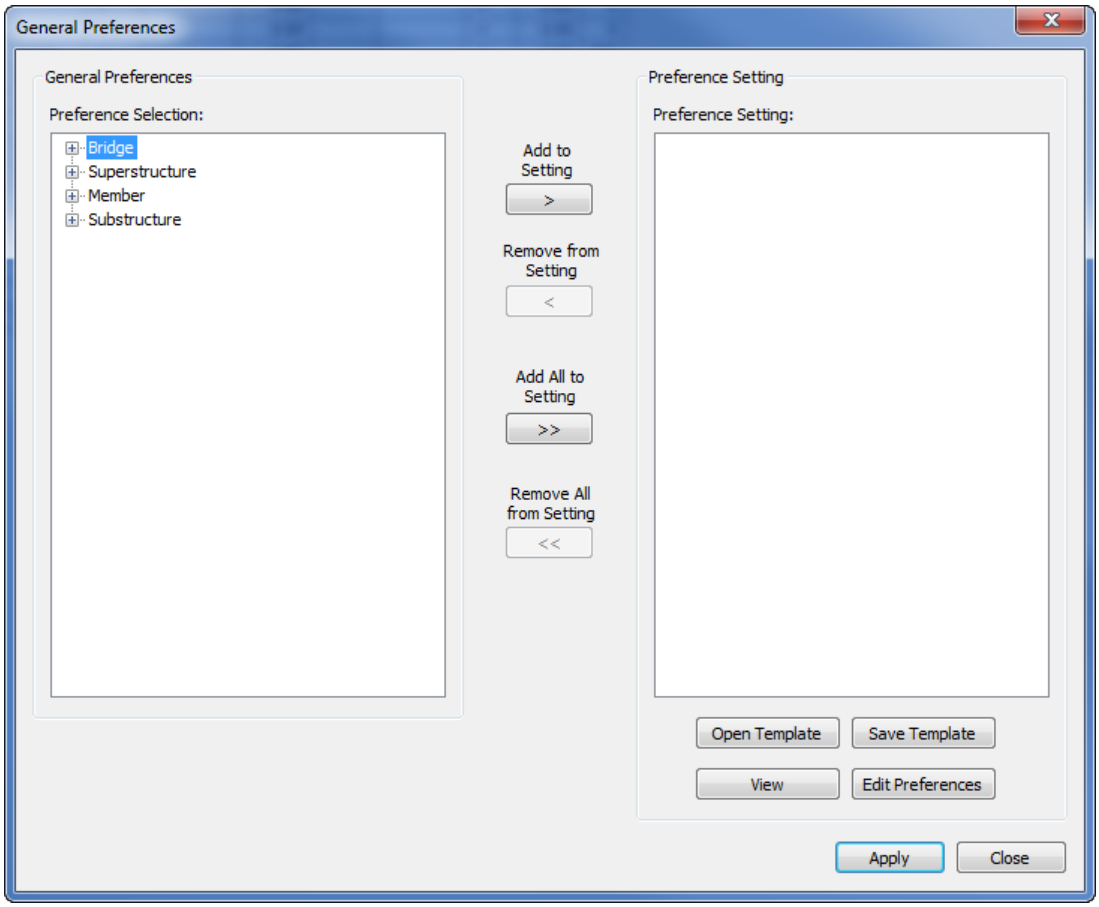


Fig6. General Preferences Window

In the General Preferences window following list of preferences are available:

- Default Units
- Standard Impact Factor
- LRFD Dynamic Load Allowance
- Average Humidity
- Consider Structural Slab Thickness (for rating and design)
- Consider Wearing Surface (for rating and design)
- Sustained modular ratio (for steel members and concrete members)
- DL Distribution Method (for Stage 1 and Stage 2)
- Prestress Loss Method
- Include elastic gains
- Analysis Module - ASD, LFD, LRFD and LRFR (for different types of structural elements) - Girder (Steel, PS, RC, Timber), Floorbeam (Steel), Stringer (Steel) and Deck (Timber, Corrugated Metal)
- Default rating method

- Deck and Beam (Top and Bottom) Exposure factor
- Deck and Beam (Top and Bottom) Crack control parameter
- All items in Member Alternative Control Options
- Consider deck differential shrinkage loads
- Ignore positive moment at supports in ratings
- Substructure Design Parameters
- Substructure Environmental Conditions (Wind, Temperature and Stream)
- Substructure Model Settings (Default Parameters)
- Substructure Load Combination Settings
- Substructure Load Palette
- Substructure Stiffness Analysis Method
- Substructure Reports

On General Preferences window expand Member by clicking on "+". Under "Member" go to control Options – PS and select Shear Computation Method. Click on "Add to Setting" button to add it to the Preference Setting.

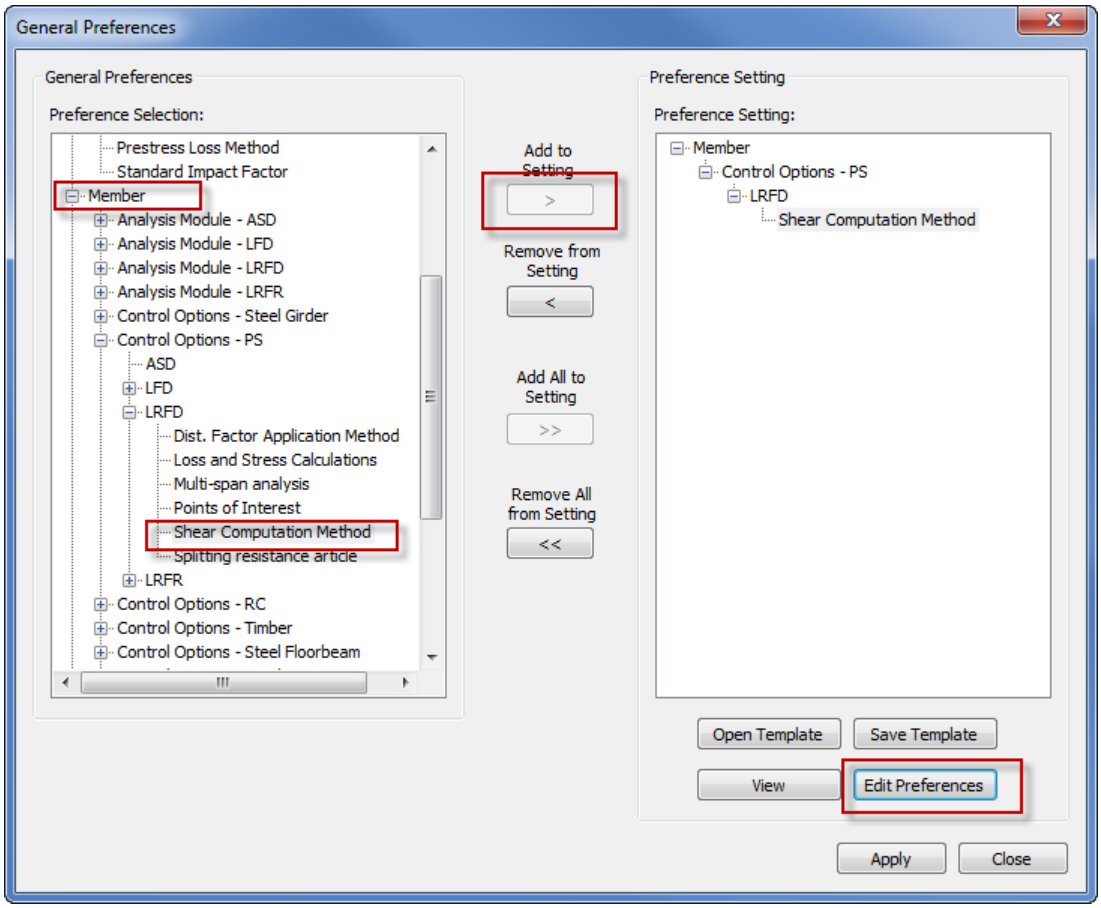


Fig 7. General Preferences Window – Shear Computation Method Preference Setting

After Shear Computation method is added to preference setting, select “Shear Computation Method” and click on “Edit Preferences” button. Edit Preferences window for Shear computation method (Fig 8) will be populated**.**

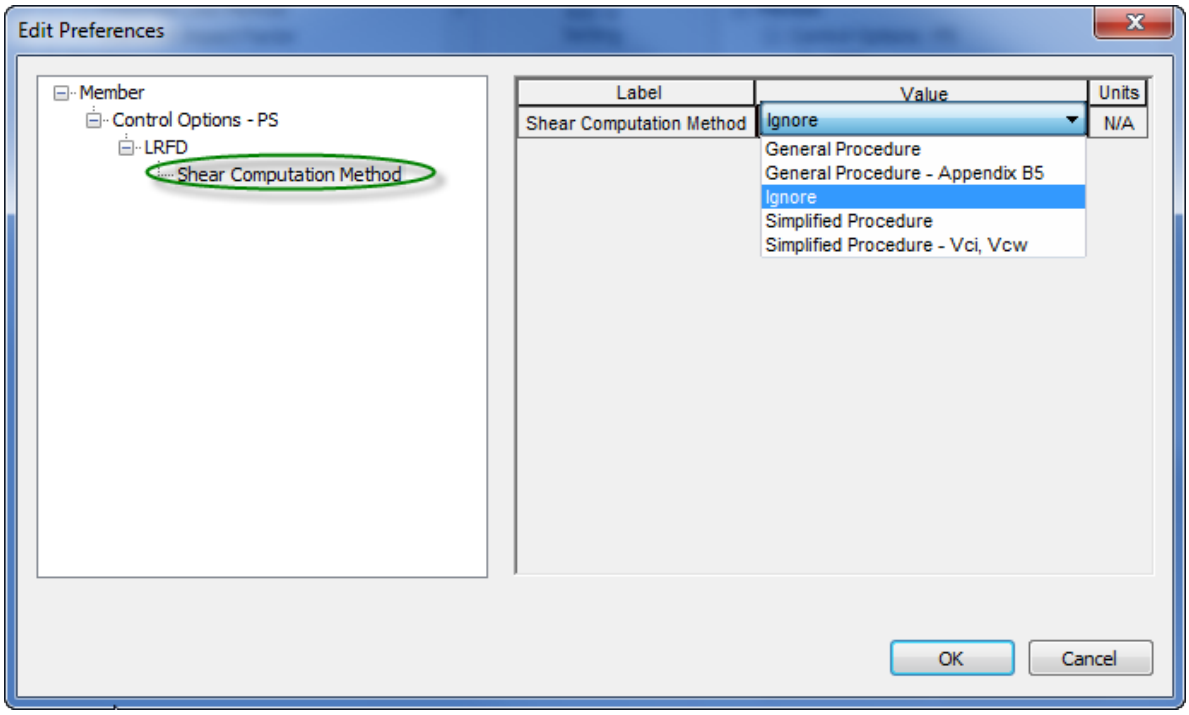


Fig 8. Edit Preferences Window – Shear Computation Method

On Edit Preferences window select and click on Shear Computation Method. Now various options for shear computation method will be populated under “Value” column. Select preferred method as “Ignore”. Click on “OK” button to save and close the window.

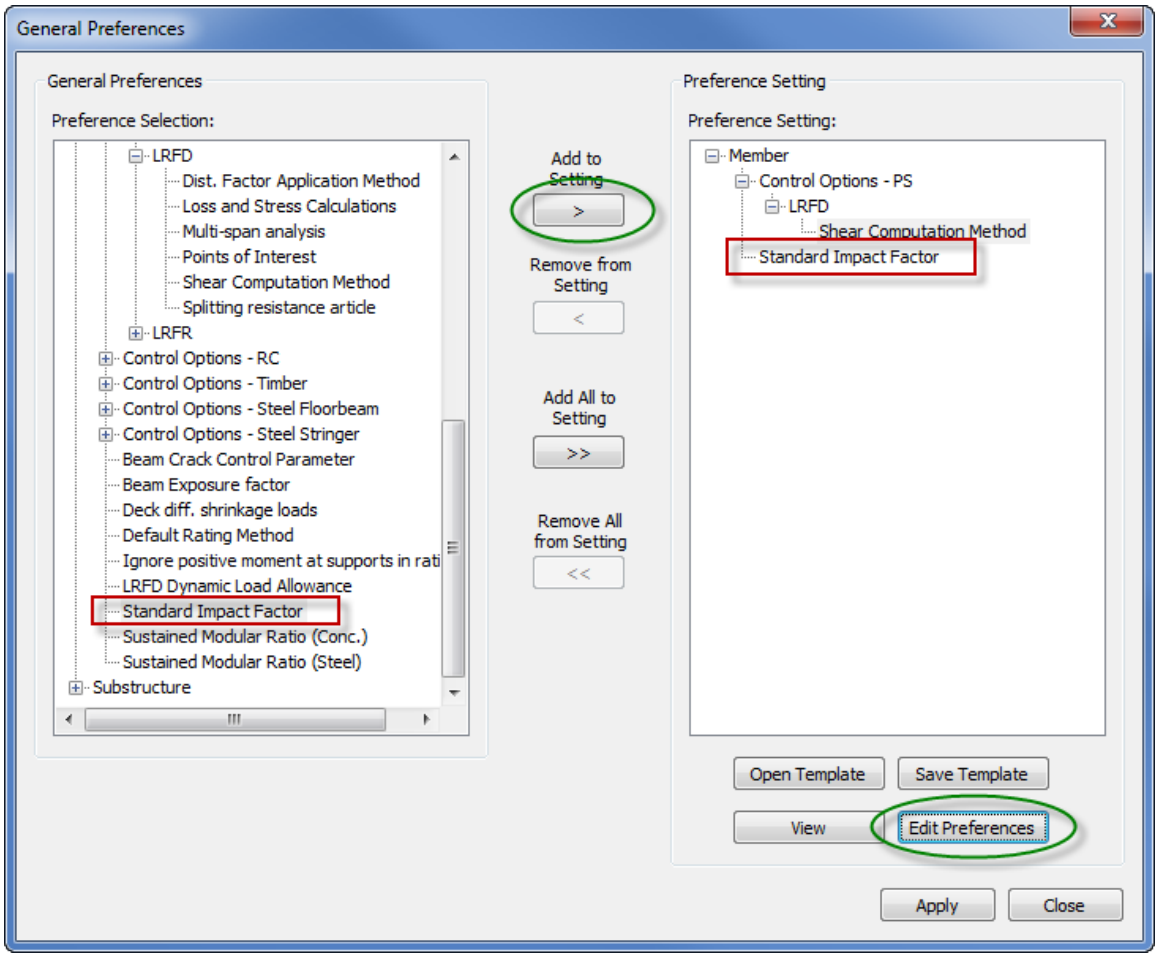


Fig 9. General Preferences Window – Standard Impact Factor Preference Setting

In Preference Selection, under "Member" select Standard Impact Factor and click on "Add to Setting" button to add it to Preference Setting. In Preference Setting select "Standard Impact Factor" and click on "Edit Preferences" button. Edit Preferences window for Standard Impact Factor will be populated**.**

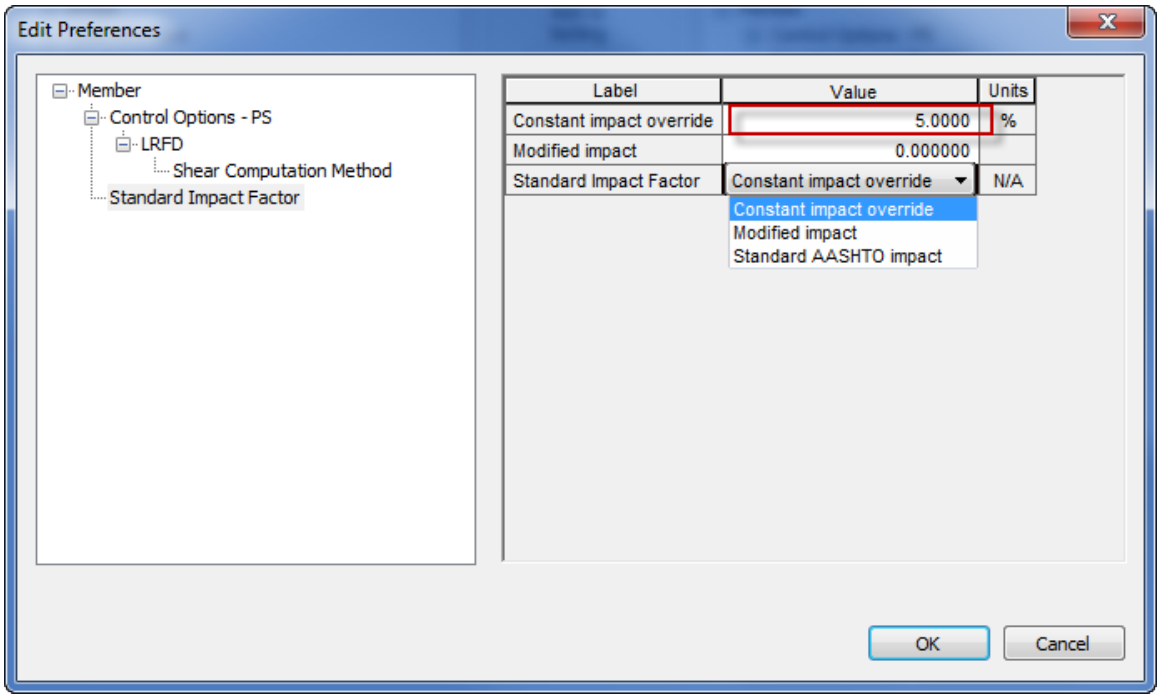


Fig 10. Edit Preferences Window – Standard Impact Factor

On Edit Preferences window select and click on Standard Impact factor. Now various options for Standard Impact factor will be populated under "Value" column. Change "Constant impact override" to 5.0% and select preferred method as "Constant impact override". Click on "OK" button to save and close the window.

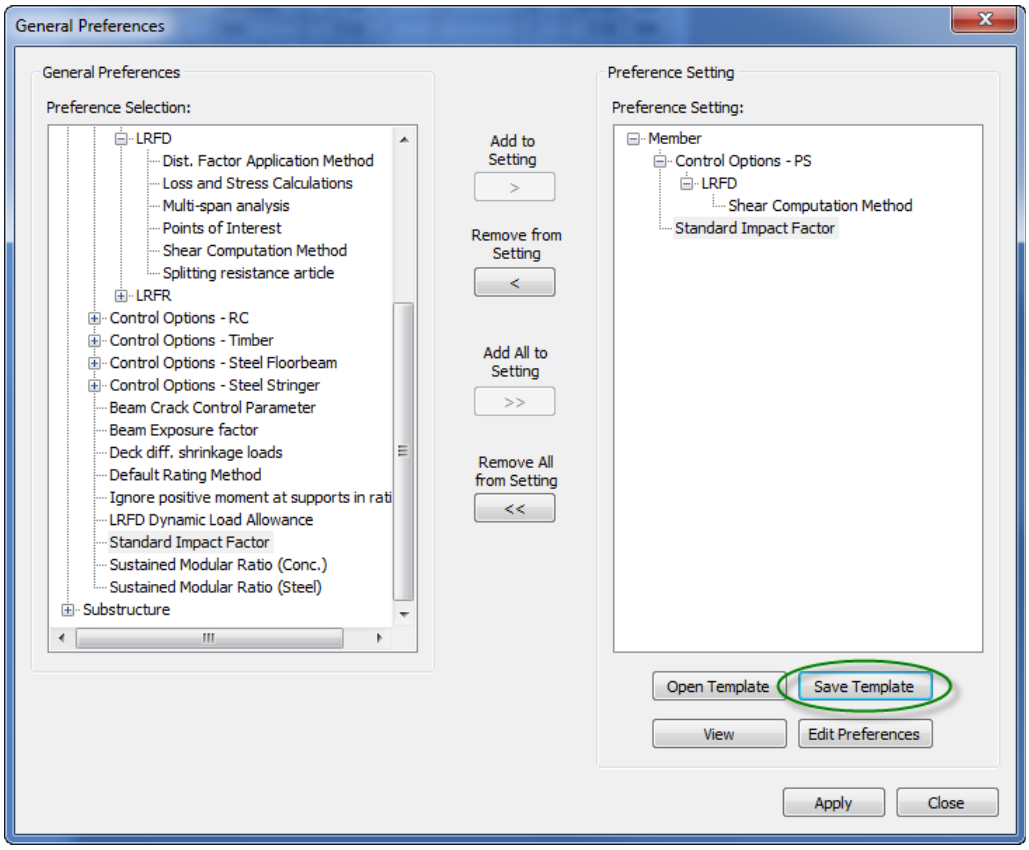


Fig 11. Edit Preferences Window

After Edit Preferences window is closed, on General Preferences window click on "Save Template" button (Fig 11) to open "Save Template" window. On Save Template window enter Template Name and Description (Fig 12). Now click on "Save" button to save and close the window.

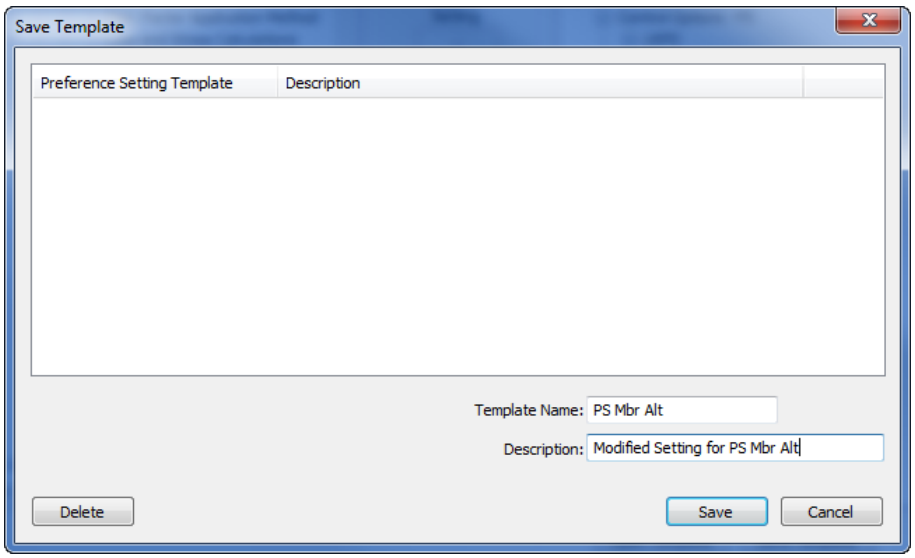


Fig 12. Save Template Window

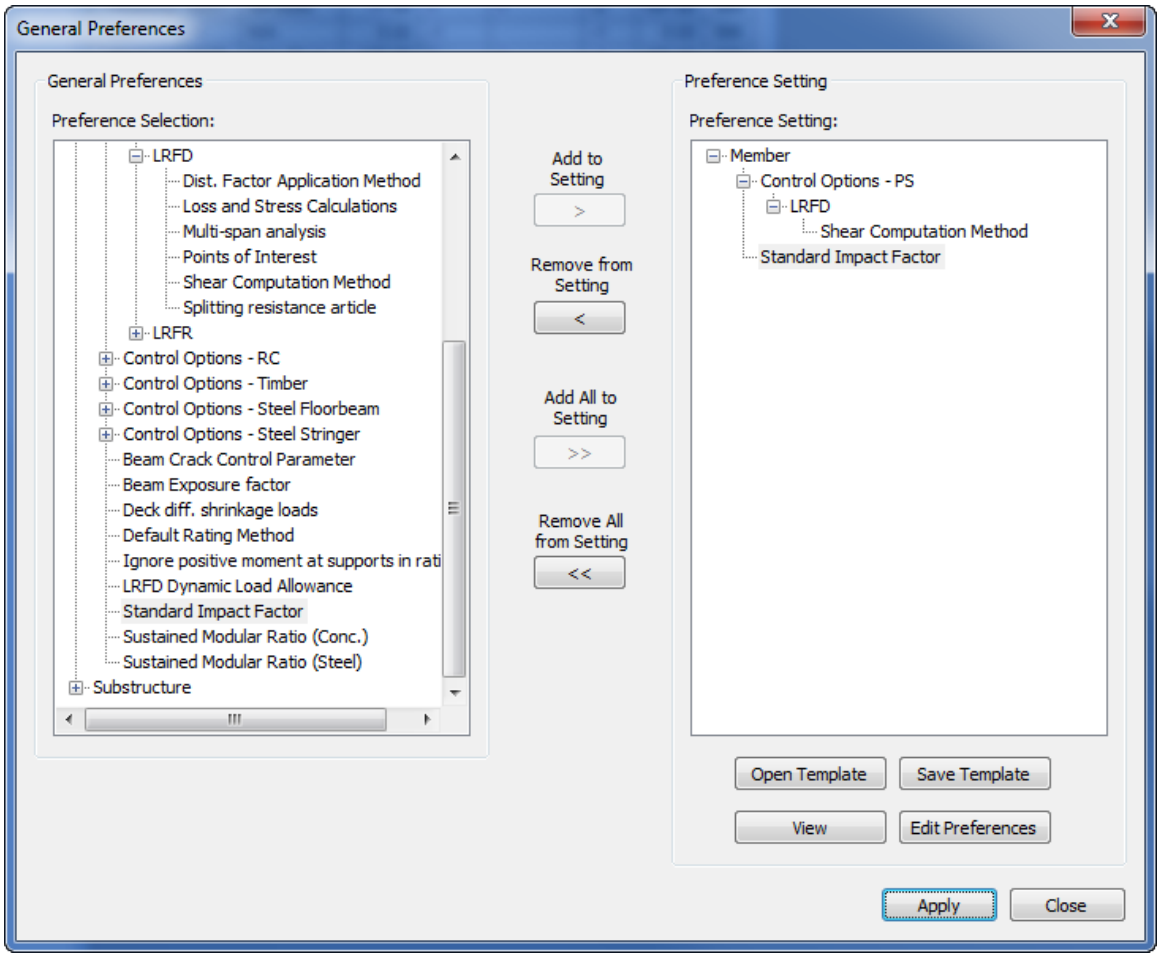


Fig 13. General Preferences Window

Now on General Preferences window click on “Apply” button (Fig 13) to apply the preferred settings. A reconfirmation window (Fig 14) will be populated asking yes or no to apply the settings. Click on “Yes” to apply the modified settings to the bridge.

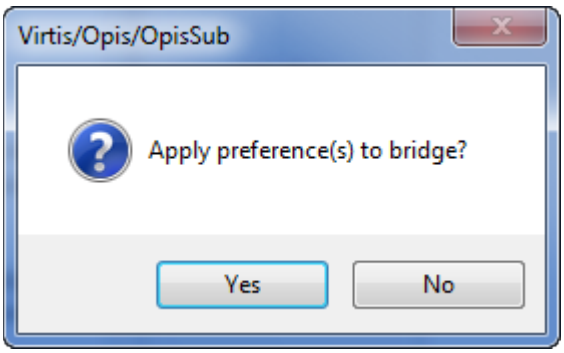


Fig 14. Reconfirmation Window

Now go to G2, Member Alternative - Interior Member (E) (C) and double click on it to open Member Alternative Description window. On this window go to Control Options tab (Fig 15). On this Control Options tab under LRFD settings, we can see shear computation method has been changed to Ignore. Click on "Cancel" button to close the window.

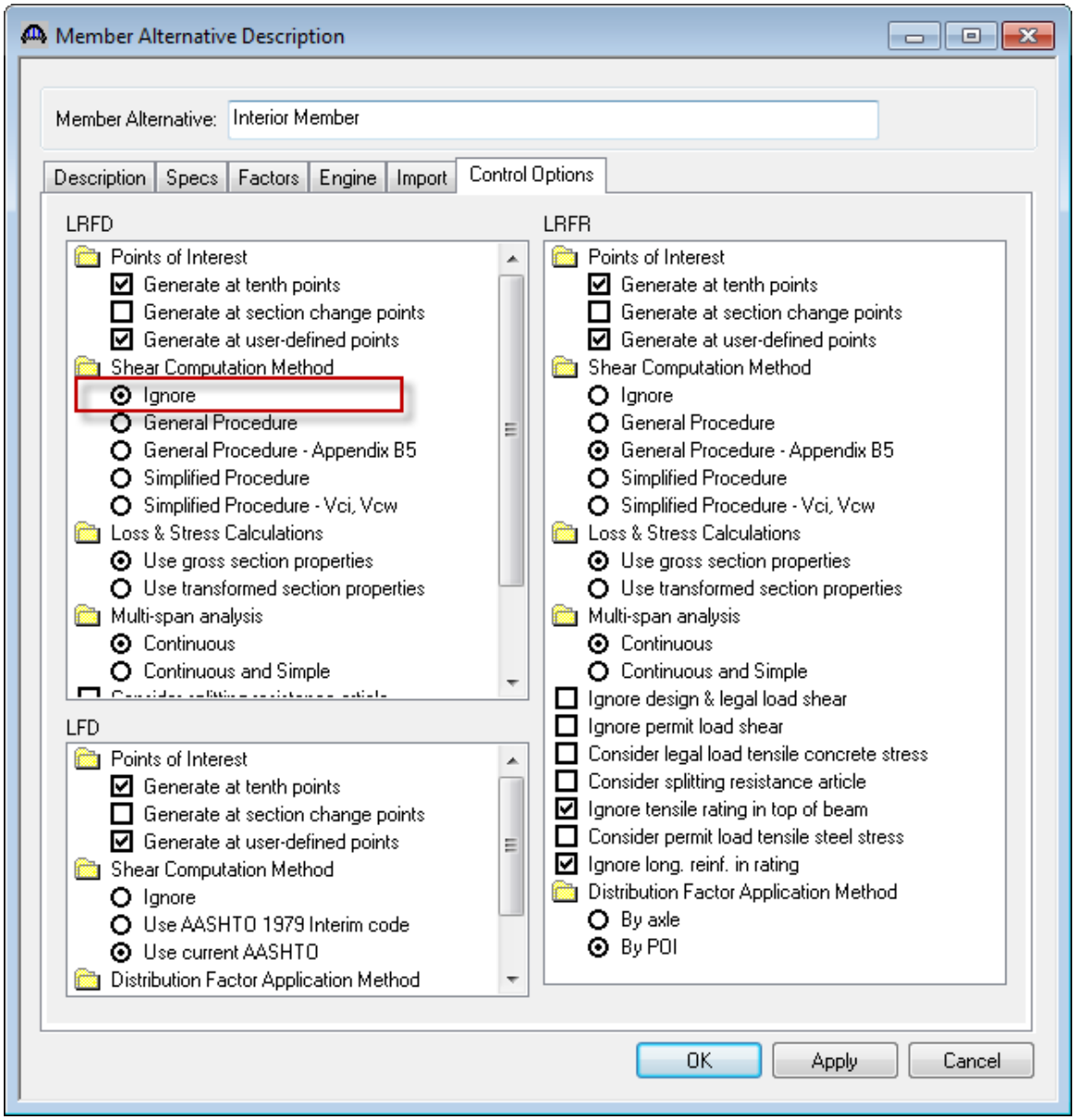


Fig 15. Member Alternative Description Window – Modified Control Options Tab

Similarly go to Impact/ Dynamic Load allowance under Interior Member (E) (C) in Bridge Workspace tree. Double click on it to open Member Alternative Impact/ Dynamic Load allowance window. In this window we can see that the default impact factor has been changed to “Constant impact override” of 5.0 % as we selected in general preferences. Click on “Cancel” button to close the window.

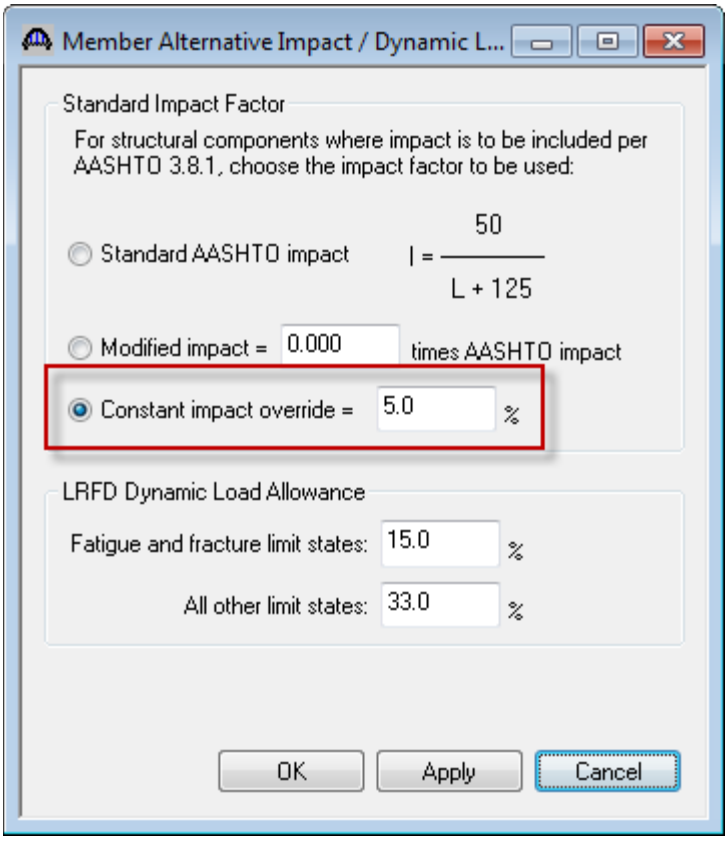


Fig 16. Member Alternative Impact/ Dynamic Load Allowance Window

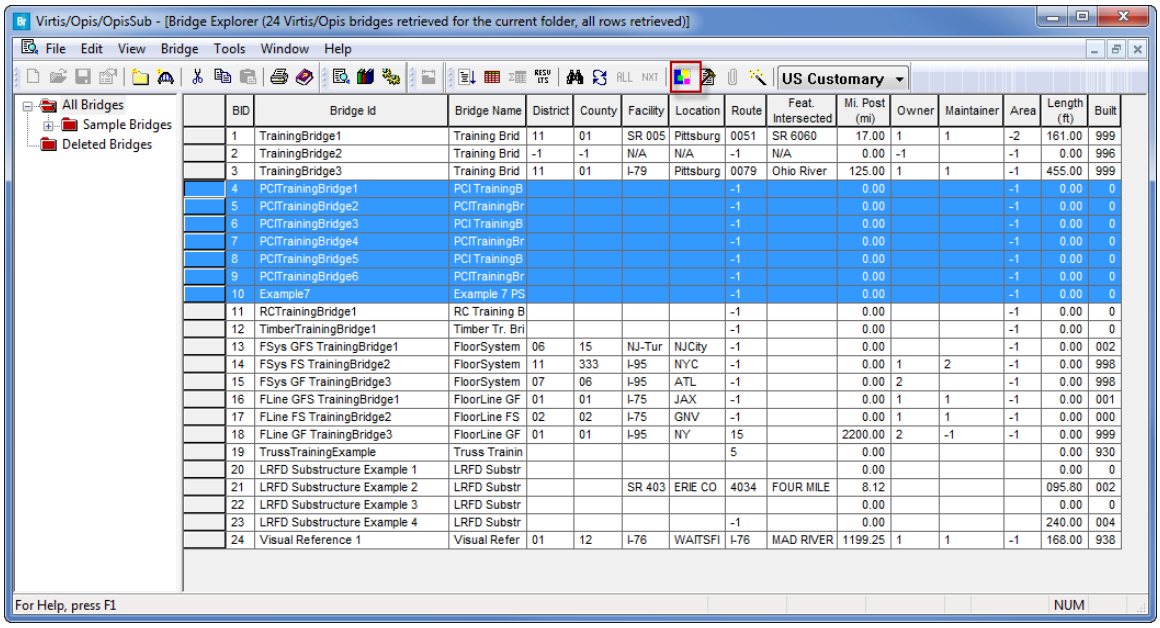


Fig 17. Bridge Explorer with PS Bridges Selected

These general preferences can be applied to multiple bridges at once. To perform this action select all the PS bridges in the Bridge Workspace as shown in Fig 17. Now click “General Preferences” button on Bridge Workspace toolbar. This would populate “General Preferences” window. On General Preferences window click “Open Template” button (Fig 18).

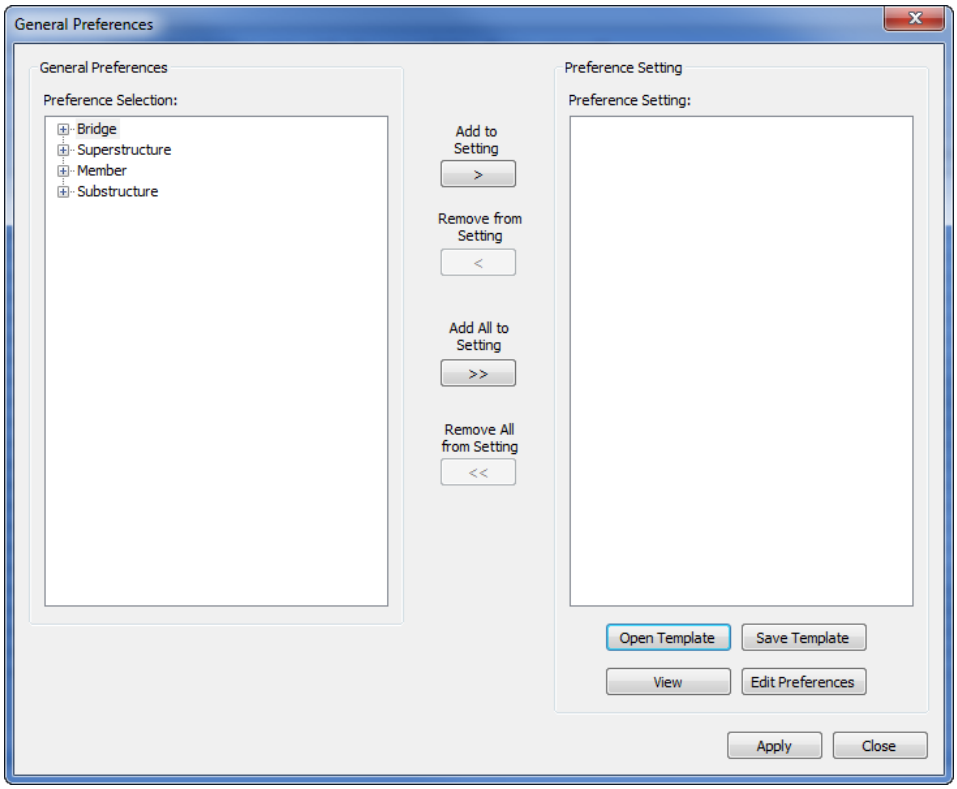


Fig 18. General Preference Window

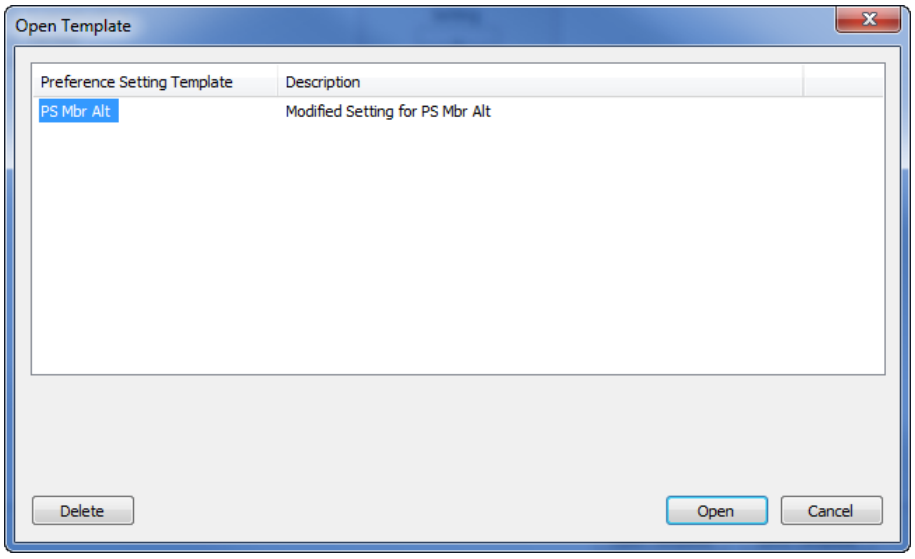


Fig 19. Open Template Window

Open Template window (Fig 19) with list of available templates will be populated. From this list select previously saved “PS Mbr Alt” Template and click “Open” button. On General Preferences window previously selected settings will be shown under Preference Setting. Now click on “Apply” button to apply the preference settings to selected bridges. A reconfirmation window will be populated, click on “Yes” to apply the preferences.

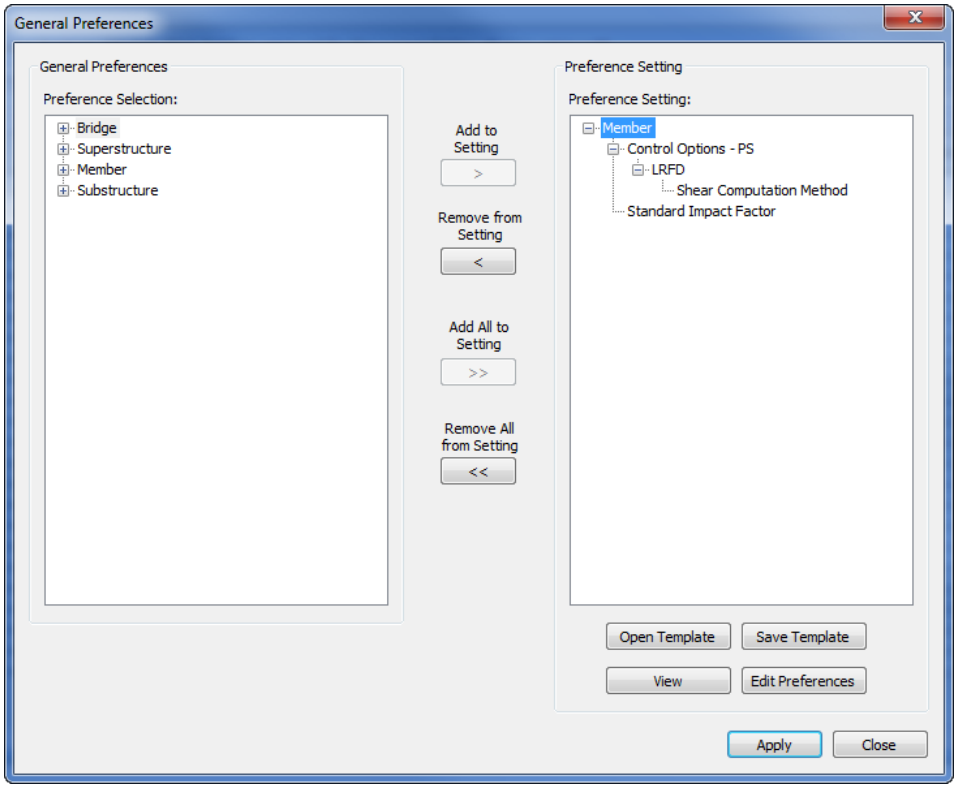
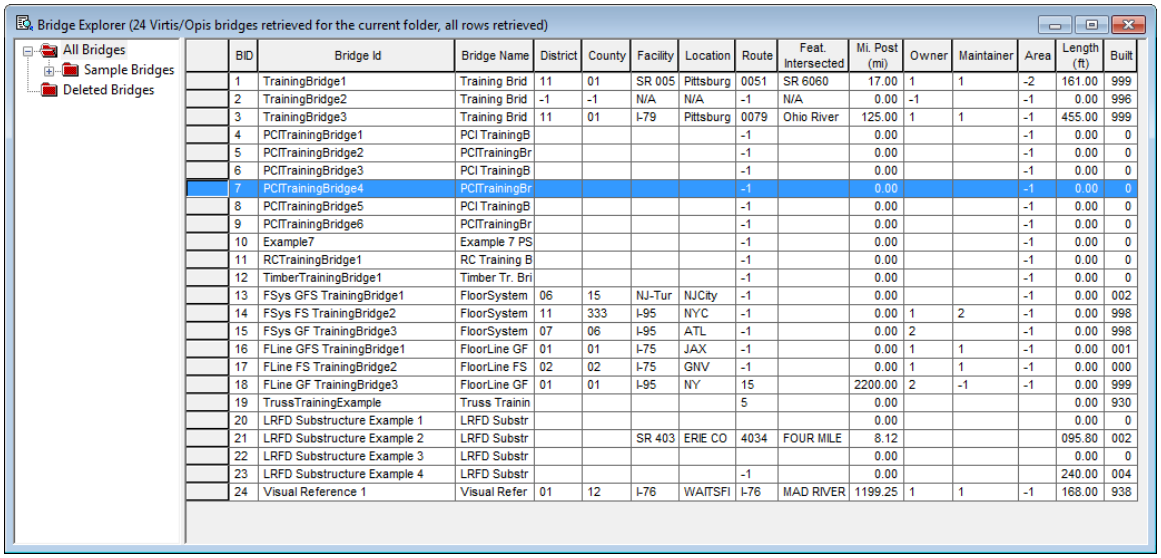


Fig 19. General Preferences Window

To verify whether these preferences have been applied to all the selected bridges click and open "PCITrainingBridge4" (BID 7).



	BID	Bridge Id	Bridge Name	District	County	Facility	Location	Route	Feat. Intersected	Mi. Post (mi)	Owner	Maintainer	Area	Length (ft)	Built
	1	TrainingBridge1	Training Brid	11	01	SR 005	Pittsburg	0051	SR 6060	17.00	1	1	-2	161.00	999
	2	TrainingBridge2	Training Brid	-1	-1	N/A	N/A	-1	N/A	0.00	-1		-1	0.00	996
	3	TrainingBridge3	Training Brid	11	01	I-79	Pittsburg	0079	Ohio River	125.00	1	1	-1	455.00	999
	4	PCITrainingBridge1	PCI TrainingB					-1		0.00			-1	0.00	0
	5	PCITrainingBridge2	PCITrainingBr					-1		0.00			-1	0.00	0
	6	PCITrainingBridge3	PCI TrainingB					-1		0.00			-1	0.00	0
	7	PCITrainingBridge4	PCITrainingBr					-1		0.00			-1	0.00	0
	8	PCITrainingBridge5	PCI TrainingB					-1		0.00			-1	0.00	0
	9	PCITrainingBridge6	PCITrainingBr					-1		0.00			-1	0.00	0
	10	Example7	Example 7 PS					-1		0.00			-1	0.00	0
	11	RCTrainingBridge1	RC Training B					-1		0.00			-1	0.00	0
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	14	FSys FS TrainingBridge2	FloorSystem	11	333	I-95	NYC	-1		0.00	1	2	-1	0.00	998
	15	FSys GF TrainingBridge3	FloorSystem	07	06	I-95	ATL	-1		0.00	2		-1	0.00	998
	16	FLine GFS TrainingBridge1	FloorLine GF	01	01	I-75	JAX	-1		0.00	1	1	-1	0.00	001
	17	FLine FS TrainingBridge2	FloorLine FS	02	02	I-75	GNV	-1		0.00	1	1	-1	0.00	000
	18	FLine GF TrainingBridge3	FloorLine GF	01	01	I-95	NY	15		2200.00	2	-1	-1	0.00	999
	19	TrussTrainingExample	Truss Trainin					5		0.00				0.00	930
	20	LRFD Substructure Example 1	LRFD Substr							0.00				0.00	0
	21	LRFD Substructure Example 2	LRFD Substr			SR 403	ERIE CO	4034	FOUR MILE	8.12				095.80	002
	22	LRFD Substructure Example 3	LRFD Substr							0.00				0.00	0
	23	LRFD Substructure Example 4	LRFD Substr					-1		0.00				240.00	004
	24	Visual Reference 1	Visual Refer	01	12	I-76	WAITSFI	I-76	MAD RIVER	1199.25	1	1	-1	168.00	938

Fig 20. Bridge Explorer

Once the Bridge Workspace tree shows up, expand "StructureDefinition #1" under "SUPERSTRUCTURE DEFINITIONS" in the tree by clicking on "+" . Then expand "MEMBERS" and select "Typical Interior Member". Expand "Typical Interior Member" and select "Member Alternative #2(9.9.4)(E)(C)" under "MEMBER ALTERNATIVES". Expand "Member Alternative #2(9.9.4)(E)(C)" by clicking on the "+". Then the Bridge Workspace tree will be as shown in Fig 21.

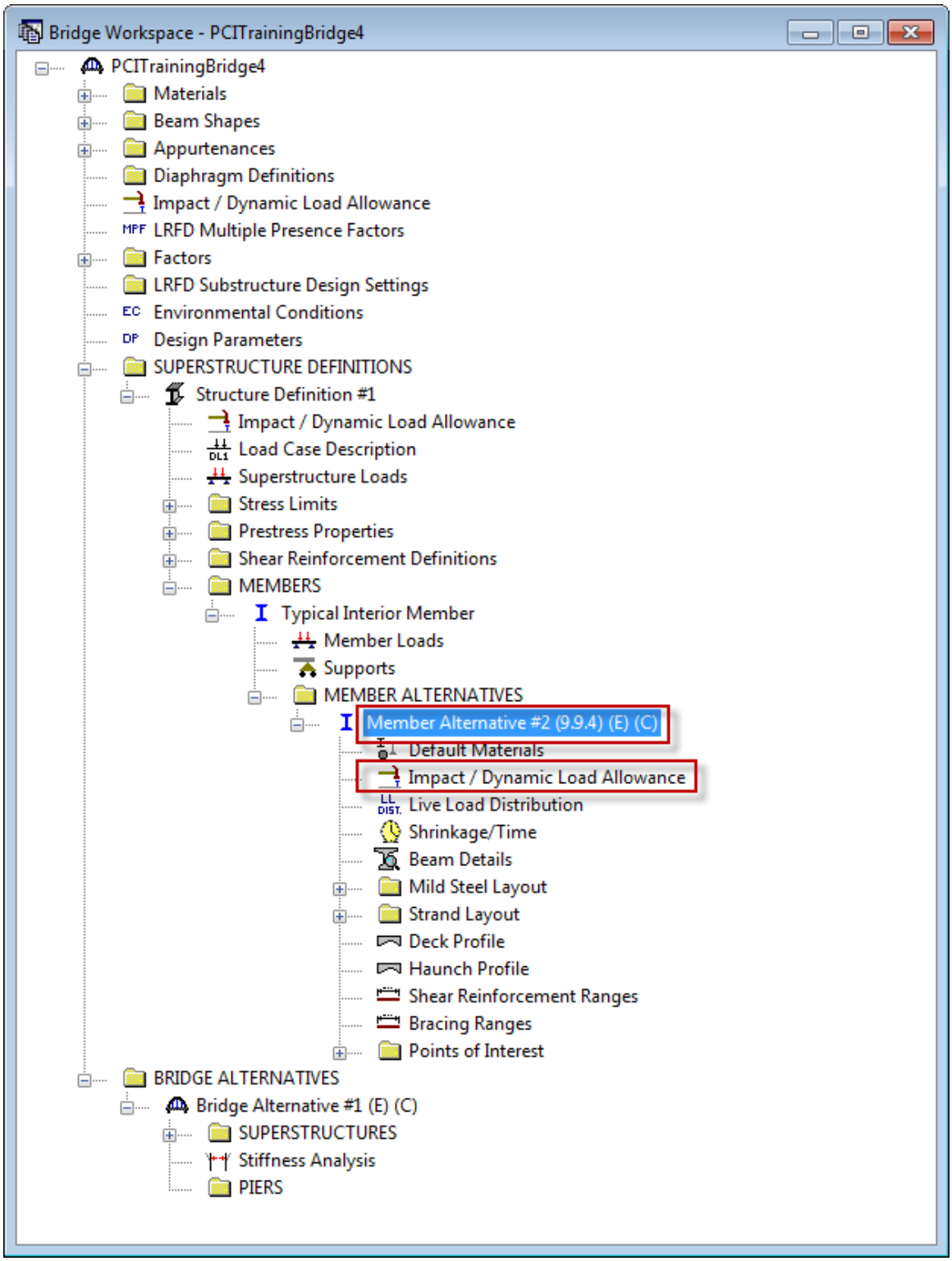

Fig 21. Bridge Workspace Tree for BID7 - Typical Interior Member

Select “Member Alternative #2(9.9.4) (E)(C)” and double click on it to open “Member Alternative Description” window. On this window go to Control Options tab (Fig 22). On this tab under LRFD settings, we can see shear computation method has been changed to “Ignore”. Click on “Cancel” button to close the window.

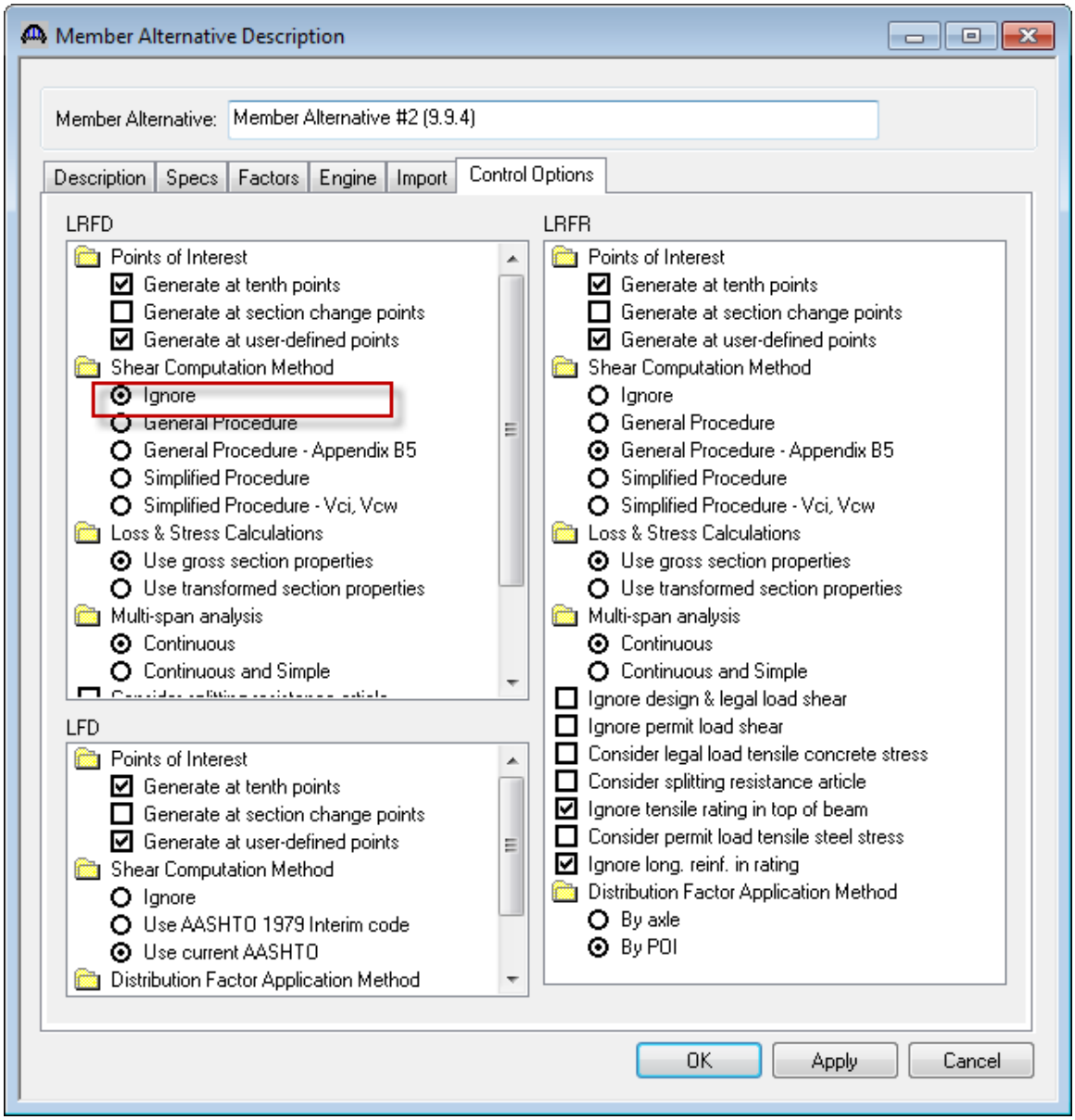

Fig 22. Member Alternative Description Window – Modified Control Options Tab

Now select Impact/ Dynamic Load allowance and double click on it to open Member Alternative Impact/ Dynamic Load allowance window. In this window we can see that the default impact factor has been changed to “Constant impact override” of 5.0%. Click on “Cancel” button to close the window

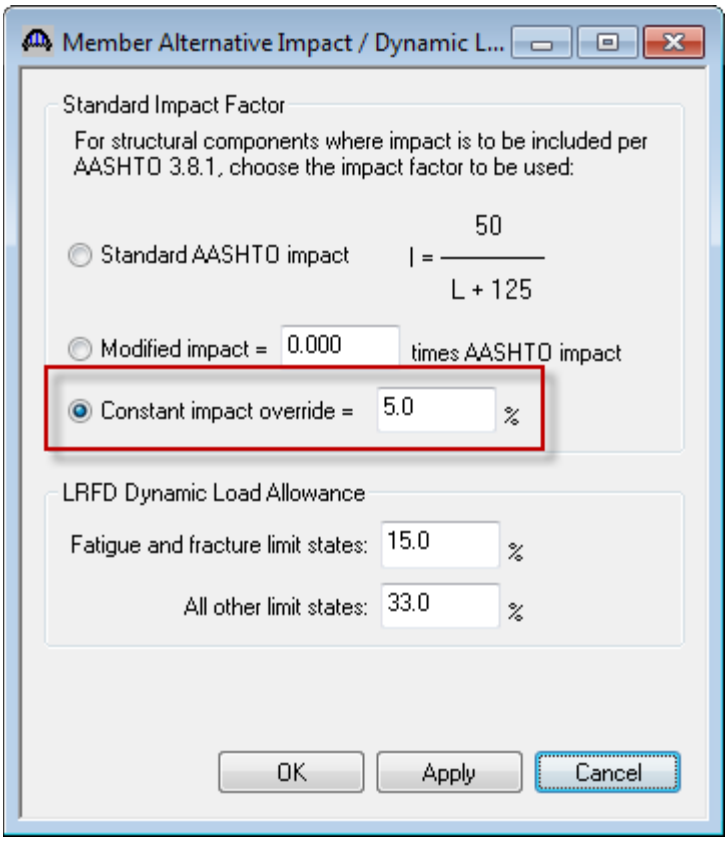

Fig 23. Member Alternative Impact/ Dynamic Load Allowance Window

In order to prevent the hassle of applying template every time a new bridge is created or imported, specific template with selected preferences can be set as default template. This can be performed by selecting and clicking on “Configuration Browser” button (Fig 24) on toolbar when Bridge Explorer is opened.

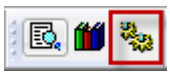

Fig 24. Configuration Browser

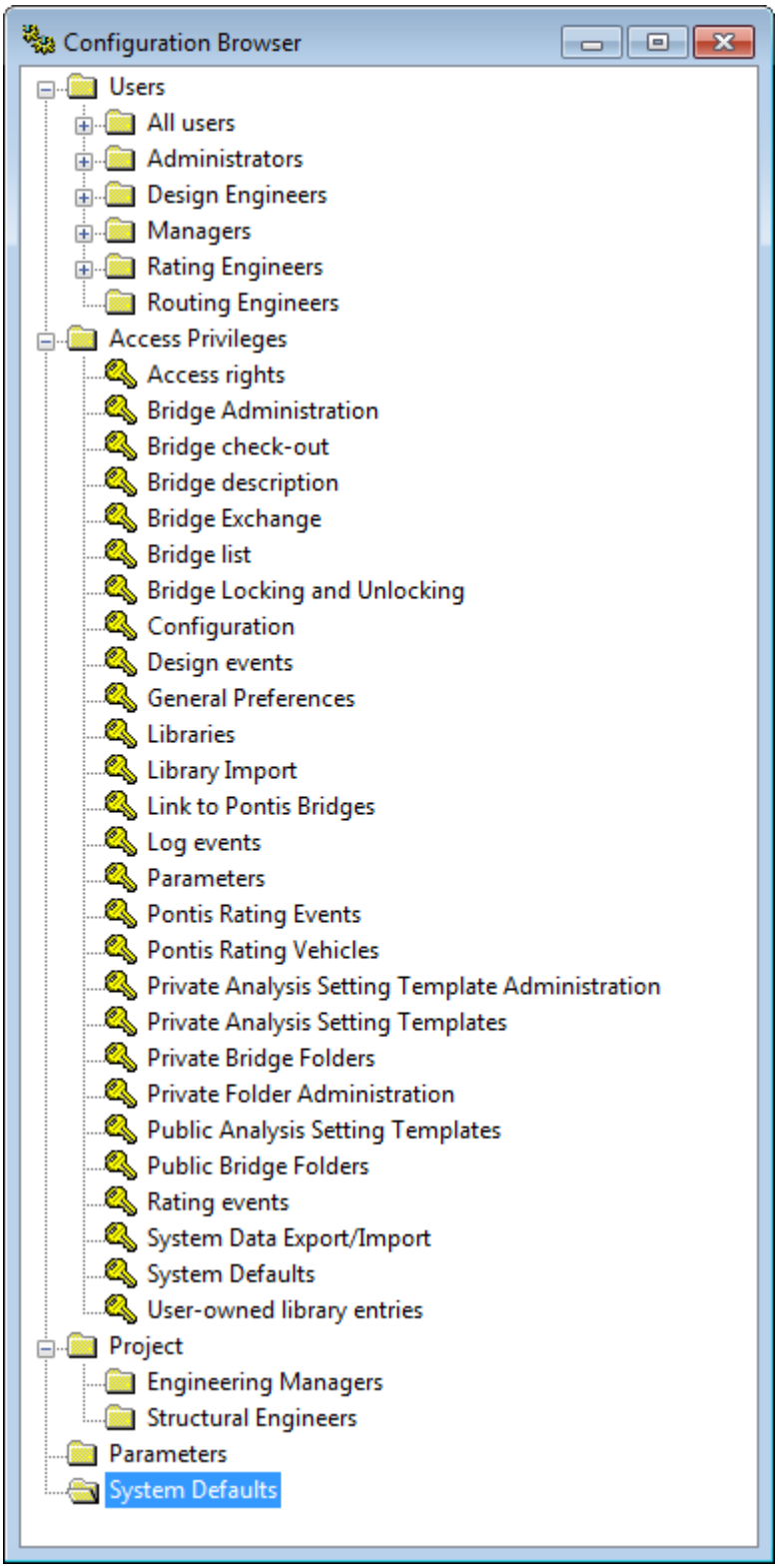

Fig 25. Configuration Browser Window

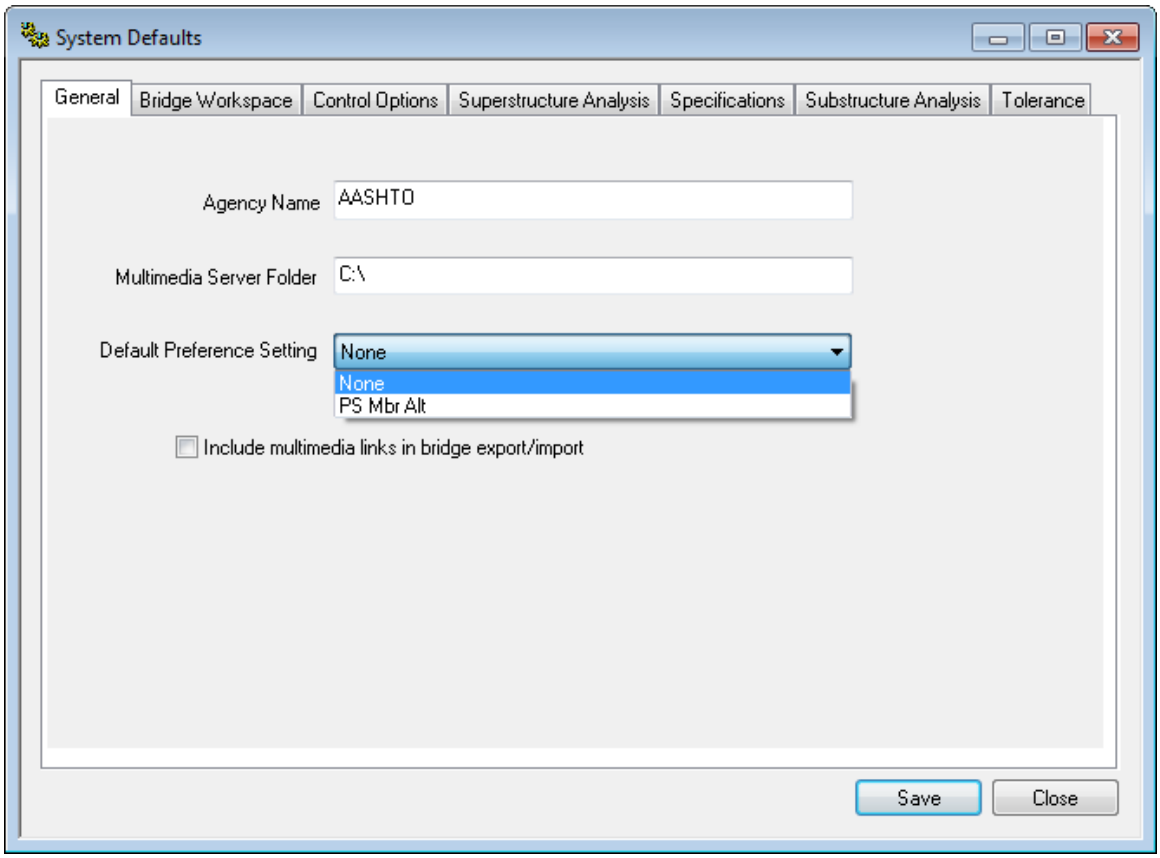

Fig 26. System Defaults Window – General tab

On Configuration Browser window select and double click "System defaults" to populate System Defaults window. On System defaults window – General Tab, select "PS Mbr Alt" template as default preference setting. Click on save button to save changes made to the window. Now this template is applied every time an analysis is performed.

Applying a General Preference template without actually changing the bridge data is also possible. When you perform analysis for a particular bridge, on Analysis Settings window there is option for selecting particular template as shown in Fig 27.

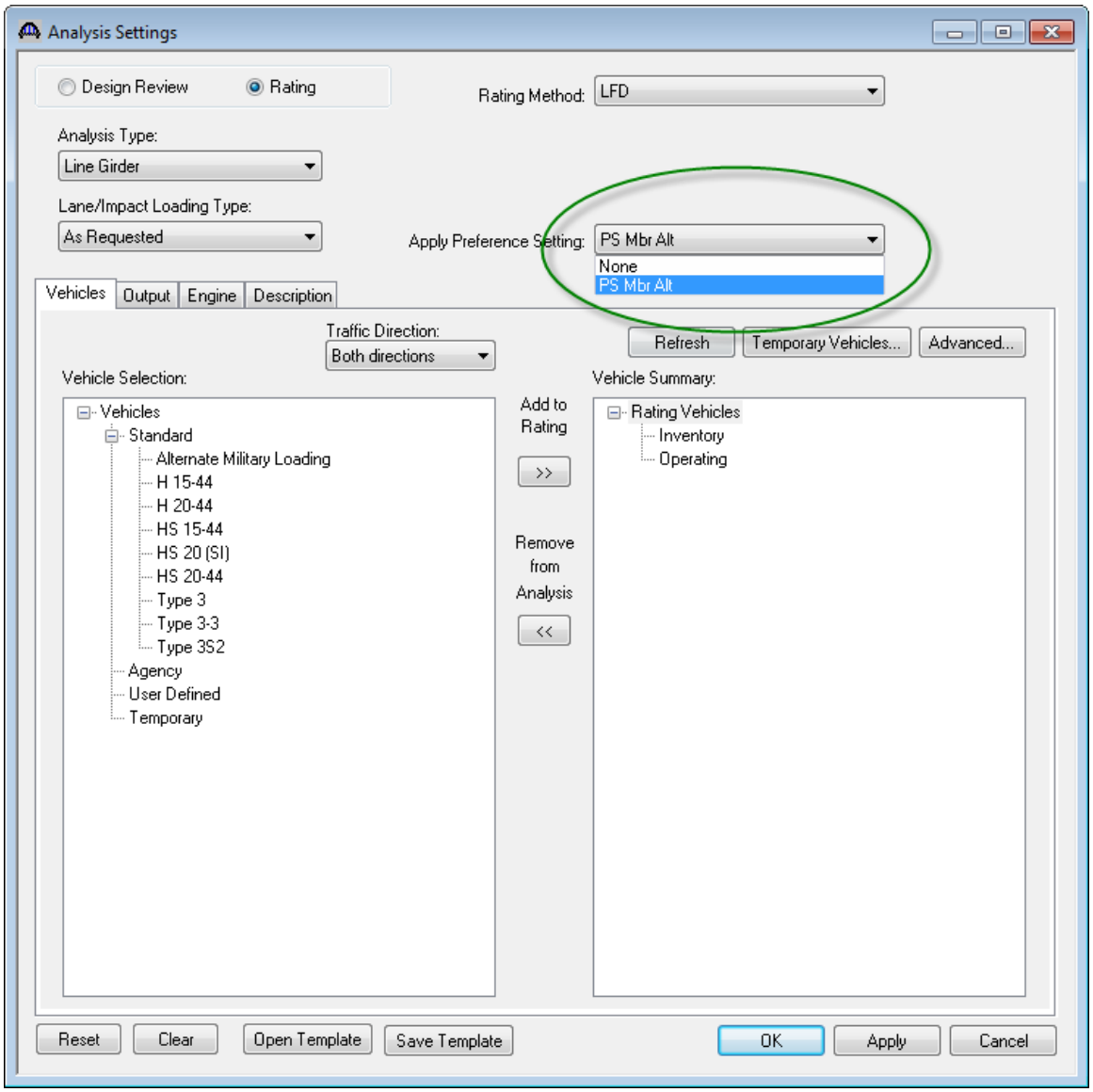

Fig 27. Analysis Settings Window

Selecting General Preference template in Analysis Settings window will not change the bridge data, but preferred settings will be applied during analysis.