DESIGN VERIFICATION CHECKLIST: WIND LOADING

SE University has compiled a Checklist to highlight key items for structural engineers to confirm when performing design or checking a design. Also included are checks to perform when reviewing a software analysis model. We hope that performing these quick checks will minimize any oversights in your design.

☐ 1. **Code Check:** Confirm the correct code is assumed in your software analysis model. If ASCE 7-10 is used in the analysis model, confirm factored wind loads are applied, and that the correct load combinations are used for code check.

☐ 2. **Enclosure Classification:** Confirm open, partially enclosed, and enclosed structure classifications are determined and applied correctly. Refer to ASCE 7-10 Section 26.2.

☐ 3. **Analysis Procedure:** Confirm the correct analysis procedure is chosen for your specific building type. Consider enclosure, building height, simple diaphragms, parapets, etc.

☐ 4. **Base Shear Check:** Does the resulting base shear output equal the applied lateral load?

☐ 5. **Torsion:**
- Verify torsion due to wind loads is considered. Refer to ASCE 7-10 Section 27.4.6 Directional Procedure for applicability.
- Check analysis model member results for beams, columns, walls, and plate elements to verify torsion is being considered.

☐ 6. **Parapets:** Ensure parapet loading is included in applied wind loading.

☐ 7. **Uplift:**
- Verify load path to resist uplift forces.
- Are hold-down or anchor connections at the base of the superstructure adequately designed to resist uplift?
- Confirm the percentage of DL and SDL assumed in uplift force determination.
- Review how you are dealing with uplift in your software models.

☐ 8. **Check drift:**
- Check interstory and full height drift.
- Verify base conditions assumed in model are consistent with actual foundations (pins, springs, etc).
- If you have one model that contains expansion joints, confirm the diaphragms and lateral systems in the separated structures behave independently.
- Check drift at expansion joints is consistent with expansion joint gaps and details.

This checklist is intended to serve as an overall starting point for your design verification efforts. Please customize as required to meet the needs of your specific project. Do you have additional items to include as part of this checklist? We welcome your feedback! Please email Cathleen Jacinto at Cathleen.Jacinto@LearnWithSEU.com.