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SEAW Commentary on Wind Code Provisions Volume 2 – Example Problems

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Preface

Since 1991, the Structural Engineers Association of Washington (SEAW) has published several editions of the *Wind Commentary to the Uniform Building Code*. The documents have been made available by SEAW to help design, construction, and enforcement professionals better understand the contents of current wind codes and thereby provide a means to reduce losses resulting from wind damage. Prior editions have addressed a wide variety of wind topics as well as example problem solutions.

This third (2004) edition of the *Wind Commentary* has been updated to incorporate new knowledge on wind design and to provide commentary to the wind provisions of the newly published *International Building Code*, as well ASCE 7, *Minimum Design Loads for Buildings and Other Structures*, which is published by the American Society of Civil Engineers (ASCE). The newly published 2000 and 2003 editions of the *International Building Code* have evolved from the decision, in the late 1990s, to combine the three model code organizations in the United States — the Building Officials and Code Administrators, International, which published the *National Building Code*; the International Conference of Building Officials, which published the *Uniform Building Code*; and the Southern Building Code Congress, which published the *Southern Building Code* — into one organization, the International Code Council (ICC). With the creation of the ICC, a corollary national goal was to establish one primary reference standard for the design of buildings. This goal was met in the late 1990s with the consensus decision amongst leading design professionals to adopt ASCE 7 as the key reference standard.

In addition to providing commentary for the IBC and ASCE 7, this third (2004) edition of the *Wind Commentary* also discusses wind provisions in the *International Residential Code* (IRC), which applies to conventional housing and is published by the International Code Council.

Similar to the prior editions, this *Wind Commentary* provides extensive information and commentary on wind topics addressed by the IBC, the IRC, and ASCE 7, and problem solutions using the IBC and ASCE 7 wind pressures.

This document is organized into two volumes. Volume 1 contains the main body of the Commentary, which includes a technical and historic overview of wind codes and discussions on a broad range of topics:

- basic wind speed;
- importance factors;
- exposure and topographic effects;
- gust response;
- design for wind pressures on main wind-force-resisting systems;
- wind pressures on components and cladding of structures;
- glass and glazing;
- prescriptive provisions;
- miscellaneous and non-building structures;
- unusual wind loading configurations;
- high winds, hurricanes, and tornadoes;
- serviceability;
- wind tunnel tests applied to design practice; and
- wind design of equipment and non-building systems.

Volume 2 consists of appendices containing 13 example problems with solutions.

SEAW and the Applied Technology Council (ATC), who now serves as the publisher for the *Wind Commentary*, gratefully acknowledge the SEAW members who developed this report and the ATC-engaged Project Engineering Panel (PEP), who provided overview and guidance. The SEAW participants consisted of John Tate (SEAW President) and the following members of the SEAW State Wind Engineering Committee: Donald R. Scott (Chairman of the SEAW Wind Engineering Committee), Jerry J. Barbera (Chairman, SEAW Commentary and Handbook Committees), Ahmad, Asili, Scott Beard, Edwin T. Huston, Edgar Lebert, John V. Loscheider, William H. Mooseker, and Tony Tschanz. The ATC appointed PEP consisted of James Delahay (Chairman), Ronald A. Cook, Larry Griffis, Jon A. Pe-

terka, and Donald R. Scott. A. Gerald Brady edited the report, and Peter N. Mork, Michelle Schwartzbach, and Angela Seybold provided report production services. The affiliations of these individuals are provided in the list of project participants.

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