



Professor Robert G. Driver

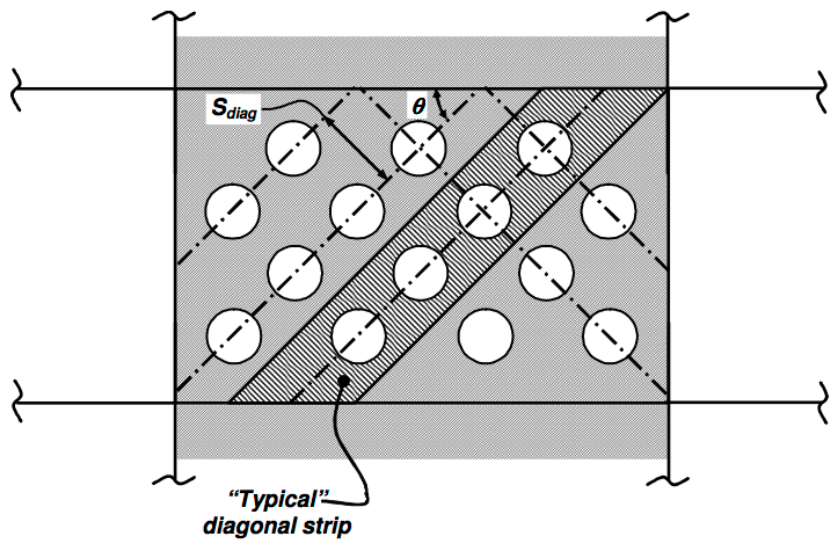


Figure 1: Schematic Detail of Special Perforated Plate Shear Wall

From: Rafael Sabelli, Michel Bruneau and Robert G. Driver, "Steel plate shear walls in the upcoming 2010 AISC seismic provisions and 2009 Canadian Standard S16", ASCE Structures 2008: Crossing Borders, 2008

See:

<http://www.civil.engineering.ualberta.ca/Research/ResearchAreas/Structural/RobertDriver.aspx>

<https://structures.civil.ualberta.ca/people/robert-driver-2/>

<https://vimeo.com/198366686>

<https://scholar.google.ca/citations?user=007CUtYAAAAJ&hl=en>

Department of Civil and Environmental Engineering
University of Alberta

Autobiography:

My research interests lie primarily in the field of steel structures engineering, including member, connection, and system behavior, as well as steel-concrete composite structures and rehabilitation of reinforced concrete structures using innovative steel solutions. I have recently begun investigations into multi-hazard approaches to structural survivability and robustness, as well as resistance to progressive collapse. My past research activity includes the development of torsional design provisions for wide-flange beams, which have been included in the Canadian steel design standard and cited in standard textbooks. I have also conducted research into optimizing the use of high performance steel in bridge plate girders that has resulted in the development of a corrugated web configuration and an internally stiffened double-plate web. The corrugated web results have been used in a highway bridge in Pennsylvania, USA. I conducted the first ever large-scale test of a multi-storey steel plate shear wall (and several subsequent tests) to confirm its outstanding performance under extreme cyclic loading. This research is also referenced extensively in the Canadian and American national steel design standards and is used world-wide. My work on bolted and welded connections is widely cited and has influenced North American design codes and standards in several areas.

Education:

- Ph.D. in Structural Engineering, University of Alberta, 1996
- M.Sc. in Structural Engineering, University of Alberta, 1987
- B.Sc. in Civil Engineering, University of Alberta, 1983

Research Interests:

1. global robustness in steel structures;
2. reliability of fillet welded connections;
3. seismic rehabilitation of concrete frames using steel confinement collars, including behaviour of collared columns under cyclic shear-dominant loading;
4. protective structures and behavior under blast-loading;
5. harmonization of bolted connection design provisions for codification;
6. progressive collapse mitigation in buildings;
7. performance of steel plate shear walls in low and moderate seismic regions;
8. large-scale testing of steel plate shear walls with partially encased composite columns;
9. optimization and dynamic behavior of steel plate shear walls

Professional Experience:

- 2010 to present, Associate Chair, Undergraduate Studies, Department of Civil and Environmental Engineering, University of Alberta
- 2006 to present, Professor, Department of Civil and Environmental Engineering, University of Alberta
- 2004, Visiting Research Scientist, ATLSS Research Center, Lehigh University, Bethlehem, Pennsylvania
- 2000 to 2006, Associate Professor, Department of Civil and Environmental Engineering, University of Alberta
- 1997-2000, Assistant Professor, Department of Civil and Environmental Engineering, Lafayette College, Easton, Pennsylvania
- 1997-2000, Visiting Research Scholar, ATLSS Research Center, Lehigh University, Bethlehem, Pennsylvania
- 1997, Research Engineer, Centre for Engineering Research, Edmonton, Alberta
- 1994, Structural Design Engineer, BP-TEC Engineering Group, Edmonton, Alberta
- 1990-1992, Structural Design Engineer, Robert Halsall and Associates, Toronto, Ontario
- 1987-1990, Structural Engineer, Canadian Institute of Steel Construction, Toronto, Ontario

Honors, Awards and Appointments:

- 2011 Raymond C. Reese Research Prize, American Society of Civil Engineers
- 2011 Outstanding Teaching Award, American Society for Engineering Education, Pacific Northwest Section
- 2011 Teaching Excellence Award, Delta Chi
- 2009-10 McCalla Research Professorship, University of Alberta
- 2009 Excellence in Education Summit Award, Association of Professional Engineers, Geologists and Geophysicists of Alberta
- 2009 H.A. Krentz Research Award, Steel Structures Education Foundation
- 2008 Vinnakota Award, Structural Stability Research Council
- 2008 H.A. Krentz Research Award, Steel Structures Education Foundation
- 2007 J. James R. Croes Medal, American Society of Civil Engineers
- 2007 Rutherford Award for Excellence in Undergraduate Teaching, University of Alberta

- 2007 H.A. Krentz Research Award (co-recipient), Steel Structures Education Foundation
- 2006-07 Faculty of Engineering Undergraduate Teaching Award
- 2006 H.A. Krentz Research Award, Steel Structures Education Foundation
- 2006 Engineering Program Chair, National Bi-annual Educators' Conference, Steel Structures Education Foundation
- 2005-06 Faculty of Engineering Undergraduate Teaching Award
- 2003-04 Faculty of Engineering Undergraduate Teaching Award
- 2003 Visiting Professor of Steel Structures Engineering, Southern African Institute of Steel Construction
- 2003 Invited Lectureship, University of Cape Town, South Africa
- 2003 Invited Lectureship, University of the Witwatersrand, Johannesburg, South Africa
- 2003 Southern African Institute of Steel Construction National Lecture Tour

Selected Publications:

R.G. Driver, Seismic Behavior of Steel Plate Shear Walls, Dissertation of PH.D. Department of Civil and Environmental engineering, University of Alberta, Alberta, Canada, (1997)

Kulak GL, Kennedy DJL, Driver RG, Medhekar M (2001) Steel plate shear walls - An overview. Engineering Journal.

Abbas, H. H., Sause, R., and Driver, R. G. (2006). "Behavior of corrugated web I-girders under in-plane loads." J. Eng. Mech., 10.1061/(ASCE) 0733-9399(2006)132:8(806), 806–814.

H.H. Abbas, R. Sause, R.G. Driver, Behavior of corrugated webs I-girders under in-plane loading, J Eng Mech, ASCE, 132 (8) (2006), pp. 806–814

H.H. Abbas, R. Sause, R.G. Driver, Analysis of flange transverse bending of corrugated web I-girders under in-plane loads, J Struct Eng, ASCE, 133 (3) (2007), pp. 347–355

Rafael Sabelli, Michel Bruneau and Robert G. Driver, "Steel plate shear walls in the upcoming 2010 AISC seismic provisions and 2009 Canadian Standard S16", ASCE Structures 2008: Crossing Borders, 2008

Anjan K. Bhowmick, Gilbert Y. Grondin and Robert G. Driver, "Nonlinear seismic analysis of perforated steel plate shear walls", Journal of Constructional Steel Research, Vol. 94, pp 103-113, March 2014

Hassan Moghimi and Robert G. Driver, "Column demands in steel plate shear walls with regular perforations using performance-based design methods", Journal of Constructional Steel Research, Vol. 103, pp 13-22, December 2014