

COMPUTATIONAL SIMULATION AND ANALYTICAL DEVELOPMENT OF  
BUCKLING RESISTANT STEEL PLATE SHEAR WALL (BR-SPSW)

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Thesis submitted to the faculty of the Virginia Polytechnic Institute and State University in  
partial fulfillment of the requirements for the degree of

Master of Science

In

Department of Civil and Environmental Engineering

Matthew R. Eatherton, Committee Chair

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Carin L. Roberts-Wollmann

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Description of item under review for fair use: Figure 3: Force-displacement plot for a shear wall web plate Berman, J.W., Celik, O.C., Bruneau, M., Comparing hysteretic behavior of light-gauge steel plate shear walls and braced frames, Engineering Structures 27 (3) (2005) 475-485.

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Description of item under review for fair use: Figure 5: Diagrammatic representation of Strip Model Lubell, A., Prion, H., Ventura, C., Rezai, M., Unstiffened steel plate shear wall performance under cyclic loading, Journal of Structural Engineering (ASCE) 126 (4) (2000) 453-460.

Report generated on: 08-08-2012 at : 07:28:20

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Description of item under review for fair use: Figure 6: Diagrammatic representation of multi-angle strip model Lubell, A., Prion, H., Ventura, C., Rezai, M., Unstiffened steel plate shear wall performance under cyclic loading, Journal of Structural Engineering (ASCE) 126 (4) (2000) 453-460.

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Description of item under review for fair use: Figure 7: Infill panel connection details tested Schumacher, A., Grondin, G.Y., Kulak, G.L., Connection of infill panels in steel plate shear Walls, Canadian Journal of Civil Engineering 26 (1992) 549-563.

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Description of item under review for fair use: Figure 9: Perforated steel plate shear walls Roberts, T., Sabouri-Ghomi, S., Hysteretic characteristics of unstiffened perforated steel plate shear panels, Thin-Walled Structures 14 (2) (1992) 139-151. Vian, D., Bruneau, M., Steel plate shear wall for seismic design and retrofit of building structures, MCEER Technical Report 05-0010, Multidisciplinary Center for Earthquake Engineering Research, University at Buffalo (2005).

Report generated on: 08-08-2012 at : 07:42:13

### **Based on the information you provided:**

#### **Factor 1**

Your consideration of the purpose and character of your use of the copyright work weighs: *in favor of fair use*

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Name: Abhilasha Maurya

Description of item under review for fair use: Figure 10: Steel plate walls with rectangular slits Hitaka, T., Matsui, S., Seismic performance of steel shear wall with slits integrated with multi-story composite moment frame, In proceedings of the 5th International Conference on Behaviour of Steel Structures in Seismic Areas, Yokohama, Japan, 2006.

Report generated on: 08-08-2012 at : 07:44:08

### **Based on the information you provided:**

#### **Factor 1**

Your consideration of the purpose and character of your use of the copyright work weighs: *in favor of fair use*

#### **Factor 2**

Your consideration of the nature of the copyrighted work you used weighs: *in favor of fair use*

#### **Factor 3**

Your consideration of the amount and substantiality of your use of the copyrighted work weighs: *in favor of fair use*

#### **Factor 4**

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Description of item under review for fair use: Figure 11: Panel with butterfly fuse Ma, X., Borchers, E., Peña, A., Krawinkler, H., Deierlein, G., Design and behavior of steel shear plates with openings as energy-dissipating fuses, Internal report, Blume Earthquake Engineering Center, Stanford University, Stanford, California (2010).

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Your consideration of the purpose and character of your use of the copyright work weighs: *in favor of fair use*

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Description of item under review for fair use: Figure 12: Yielding frame with constant cross-section Tyler, R. G.,, Further notes on a steel energy-absorbing element for braced frameworks, Bulletin of the New Zealand National Society for Earthquake Engineering 18 (3) (1985) 270-279.

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Your consideration of the purpose and character of your use of the copyright work weighs: *in favor of fair use*

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Your consideration of the nature of the copyrighted work you used weighs: *in favor of fair use*

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Your consideration of the amount and substantiality of your use of the copyrighted work weighs: *in favor of fair use*

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Description of item under review for fair use: Figure 13: Yielding frame with varying width Ciampi, V., Samuelli-Ferretti, A., Energy dissipation in buildings using special bracing systems, In proceedings of the 9th European Conference on Earthquake Engineering, Vol. 3 of 9-18, Moscow, Russia, 1990.

Report generated on: 08-08-2012 at : 07:54:18

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Description of item under review for fair use: Figure 14: Yielding frame with varying depth Ciampi, V., Samuelli-Ferretti, A., Energy dissipation in buildings using special bracing systems, In proceedings of the 9th European Conference on Earthquake Engineering, Vol. 3 of 9-18, Moscow, Russia, 1990.

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Description of item under review for fair use: Figure 15: Yielding frame with complementary plates Ciampi, V., Samuelli-Ferretti, A., Energy dissipation in buildings using special bracing systems, In proceedings of the 9th European Conference on Earthquake Engineering, Vol. 3 of 9-18, Moscow, Russia, 1990.

Report generated on: 08-08-2012 at : 08:00:16

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Name: Abhilasha Maurya

Description of item under review for fair use: Figure 16: Ring fuse Rogers, C., and Morrison, T., Ductile brace fuses for cost effective design of brace steel frames, In proceedings of North American Steel Construction Conference, Pittsburgh, Pennsylvania, 2011.

Report generated on: 08-08-2012 at : 08:01:44

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Description of item under review for fair use: Figure 42: Axial-bending interaction curve for rectangular cross-section  
Chen, W.F., Han, D.J., Plasticity for Structural Engineers, J. Ross Publishing, 2007.

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Description of item under review for fair use: Figure 103: Dependence of the equivalent strain to fracture on the stress triaxiality Bao, Y., Wierzbicki, T., On fracture locus in the equivalent strain and stress triaxiality space, International Journal of Mechanical Sciences 46 (1) (2004) 81-98.

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