

Luis Miguel Bozzo Rotondo, Msc., PhD.

www.luisbozzo.com

**Personal data:**

- Name: Bozzo Rotondo, Luis Miguel
- Place and date of birth: Lima, Peru, December 27 of 1961
- Current residence: Barcelona, Spain
- Nationality: Peru-Spain

**Academic activity:**

- Civil Engineer. "**Universidad Nacional de Ingeniería (UNI)**", Lima, Peru. 1987
- MsC. Civil Engineering. **Universidad of California in Berkeley**, USA. 1988
- PhD. Civil Engineering. **Universidad of California in Berkeley**, USA. 1988-1992
- Teaching assistant. Civil Engineering Department, "**Universidad Nacional de Ingeniería**", Peru
- Teaching assistant. Civil Engineering Department, **University of California at Berkeley**, EU, 1989-1992
- Research assistant. Civil Engineering Department, **University of California at Berkeley**, EU, 1989-1992
- Researcher, **CSIC**, Spain, 1993-1994
- Teaching assistant, Industrial Engineering school, "**Universidad de Girona**", Spain, 2000-2001
- Full Professor (TU), Industrial Engineering school, "**Universidad de Girona**", Spain, 2001-2004

**Professional activity:**

- Company "**Diseños Racionales SA (DIRACSA)**" in Lima, Peru. Main structural designer between years 1983-1998 and assessor during 1999-2002.
- Company "**RBA asociados**", Spain, Main structural designer, 2000-2003.
- Company "**Luis Bozzo Estructuras y Proyectos S.L.**" in Barcelona, Spain. Main designer and technical director since its beginning in year 2003 up to date.

The last 30 years were of continuous innovation and deeply interplay between theoretical and practical applications to civil engineering. So the theoretical plate analysis finite element **CI8m** (using mixed Reissner Functional) that I developed and programmed in FORTRAN back in the year 1983-85 raised from the need to accurately analyze long-span slabs (more than 20m free spans in both directions). In those years I designed and built in Lima using an innovative typology of "reticular mixed slabs" or "tridilosas" that allowed me records for this structural type made up of a bi-directional space truss and one or two thin 5cm concrete layers top and bottom. Thus developed theoretical activity has often been caused by the need to solve practical problems.

In U.C. Berkeley my initial activity was focused on base isolation working for Prof. Steve Mahin in the Frictional Pendulum System (FPS). Later on I focused my attention on what I consider the most important aspect in Structural Engineering which is the **Conceptual Design**. Is in Conceptual Design where main improvements or lacks may have a design compared to others. So my doctoral dissertation at U.C. Berkeley achieved to simulate "intelligence" using my computer program **Agrippa** under the direction of Prof. Greg Fenves.

**A. Main Professional works (our company designs more than 300.000m<sup>2</sup> per year and next we just indicate more relevant or special structures)**

1. “Losas reticulares mixtas” roofs record in its type (manufactures “Musiris”, “Knitex”, “Universal Textil”, among many others). Peru, 1983-1987
2. **First Building in Peru equipped with my energy Shear Link dissipator**, Lima, 2000.
3. Main postensioned roof “club de natación Sabadell” selected for readers interest in CI magazine, (Vol 25, No 4), year 2003
4. **Base isolation and postensioning for the new “Sant Pau” hospital** in Barcelona. Selected for readers interest in CI magazine, (Vol 27, No 4), year 2005
5. **Cube Tower I** in Mexico which has received various international awards and was selected as finalist for CI magazine articles in year 2008.
6. Elevated nodal road JVC in Mexico using a curved cable stay bridge, 2009
7. First building using postensioning in Bulgaria (BTV building), 2009.
8. **Soccer Stadium “Las Chivas”** in Mexico where form, geometry and structural function are visible for a seismic efficient beautiful structure. CI magazine December 2010.
9. **“Santuario de los Mártires” free form large shells** in Mexico which are the largest Catholic Church under construction (more than 110m free spans and 65m tall). The main structure is already finished and the exterior “skin” is under construction.
10. **Cube Tower II** in Mexico with 27 levels inclined 4 degrees and with a 25mx15m free of interior columns areas. An article in CI will be published next October in a special issue.
11. **Santa Fe Tower II** in Mexico with 50 levels using a central core structure and thin postensioned slabs, Finished August 2013.

**B. Theoretical contributions applicable to professional practice**

1. **Finite Element CI8m** for planar plate analysis developed and code programmed between 1983-1986 (at that time was one of the more precise elements in particular for variables of more practical interest as are bending moments compared to rotations).
2. Modeling and design of structures equipped with sliding type connections “Frictional Pendulum System (FPS)” to protect buildings against sever earthquakes, 1987.
3. Doctoral dissertation at U.C. Berkeley using artificial intelligence in order to simulate qualitative structural reasoning, Years 1988-1992.
4. Development of **general** seismic energy dissipator Shear Link since year 2000 and up to date with various practical improvements.
5. Semi-precast slabs as published in CI magazine (February 2008).
6. Semi-precast wall and self supported semi-precast-pre-stressed slabs, 2009.

### C. Scientific articles and worldwide distribution books

1. More than **100 scientific articles published in** American or European Journals as well as congress such as: *Research in engineering design*(I.I =0,405), *Applied artificial intelligence*(I.I = 0,672), *Earthquake engineering and structural dynamics* (I.I = 0,794), *Archives of computational methods in engineering* (I.I.= 0,6), *Journal of structural Control*, “*Revista internacional de ingeniería de estructuras*”, “*Revista internacional de métodos numéricos para cálculo y diseño en ingeniería*”, “*Hormigón y acero*”, *Journal of Structural engineering, ASCE* (I.I. = 0,732), *Concrete International, CI Journal. ACI magazine y Engineering structures* (I.I. = 0,364) among many others.
2. Book “**Diseño sismorresistente de edificios. Técnicas convencionales y Avanzadas**” by Luis Bozzo and Alex Barbat, Reverte, First edition year 2000 (currently available in Amazon, Google Books, among other virtual libraries).
3. Book “**Losas reticulares mixtas. Proyecto, análisis y dimensionamiento**” by Miguel Bozzo and Luis Bozzo, Reverte, First edition year 2003

### D. Patents

1. “Losa espacial compuesta prefabricada industrialmente en taller”, Spain, 1993
2. “Losa espacial mixta y procedimiento de fabricación y utilización correspondientes”, Spain, 2001
3. “Disipador de energía sísmica”, Peru, 2013.

### E. High level computer programs and educational tools

1. More than 10 significant computer programs such as CI8M, “Andrea”, “Agrippa”, “Mixed3D”, “Dominios” and “Anser” using Fortran, C++ and Prolog.