

**Company:** RK Design, Engineers  
**Name:** Ríkhartður Kristjánsson  
**Date of birth:** August 8th 1946  
**Present position:** Consultant  
**E-mail:** rk@rkdesign.is



### Key qualifications:

Ríkhartður is a civil engineer with Dr.-Ing degree with over 35 years professional experience in engineering work. Areas of expertise include project management, design management, structural mechanics and design, concrete technology, finite element methods, and the durability of structures. Director of the consulting engineers, Línuhönnun, between 1997 and 2005.

### Education:

1973	Dipl. Ing. from the Technical University of Darmstadt, Germany
1977	Dr. Ing. degree from the Technical University of Darmstadt, Germany

### Employment:

2014-2019	EFLA hf., consulting engineers
2007-2013	Íceland Prime Contractor (ÍAV)
1980-2007	Línuhönnun hf., consulting engineers
1977-1980	Building Research Institute, Reykjavík
1973-1977	Technische Hochschule Darmstadt, Wissenschaftlicher Mitarbeiter, Research
1966-1967	Menntaskólinn á Akureyri, Teacher for mathematic and physics
1966-1967	The Icelandic Harbour Authority, building harbour, summer employment
1962-1965	The Icelandic Road Authority, building bridges, summer employment

### Professional experience:

2019 – present

#### RK Design

- Assistance Judge for building problems at Landsréttur
- Renovation of the interior of Bessastaðakirkja
- A study of different façade material for Verzlunarskóli Íslands
- Studies for ÍAV regarding cracks in gasbetong walls, problems with Cembrit elements, roof constructions problems and solutions, indoor quality checking, façade quality checking and more.
- Boot museum in Stykkishólmur, preliminary study
- Design of a platform in 600 m height at Bolafjall
- Life cycle analysis and renovation cost for Harpa Concert hall
- Structural glass for stairs and staircases
- 20 m long bridge between buildings made of cables and glass
- Design manager for the extension of the Grunnskólinn í Hveragerði.

- Consultancy for Landsbanki's new headquarter, regarding concrete, facade, watertightness and more.
- Consultancy for the Conference and Concert hall Harpa for maintenance of the building
- Consultancy for the new office building of Alþingi
- Consultancy for the Central Bank of Iceland in building project in Berlin
- Advising IAV on design and construction problems in various buildings
- Building physics and detailing of concrete elements for a new building at Surlugata 6
- Building physics and supervising detailing for a new headquarter of Alvogen pharma company.
- Building physics and design supervision of the new buildings of Bláa lónið (the blue lagoon).
- Design of ice tunnels at Perlan
- Design work for IAV-Marty at the Burfell project.
- Consultancy on the artwork in Grímsey: "Rolling ball on the arctic circle" by Kristinn Hrafnsson and Steve Christer
- Consultancy on the artwork "traveling sun" by Christine Istad and Lisa Pacine.
- Design advices for various bridges in Iceland and Norway.
- Preliminary design of paths and bridges at Dettifoss.
- Design checking for IAV-Marty for tunnels in Norway.
- Design with other of a pedestrian bridge over Markarfljót
- Consultancy for the ministry of finance, the ministry of interior and the ministry of culture and education and many other state institutions regarding moisture and mold.
- Consultancy for the State Trading Centre regarding moisture and mold.
- Consultancy for the State Properties regarding moisture and mold.
- Prüfingenieur for the main contractor SMS for a new silicon plant in Húsavík, Iceland
- Design manager for a new silicon plant in Iceland for M+W Germany.
- Checking of a bridge over Breiðholtsbraut.
- Bridging 6 m cracks in a glacier ice cave with ice falling down.
- Advising the students work in Reykjavík University regarding moisture and mold problems.
- Advising National Museum of Iceland regarding repair of the Culture House in Reykjavík.
- Working with the architect Þorsteinn Gunnarsson on plans to rebuild Landakirkja in Vestmannaeyjar and bring it back to the origin from 1780.

2007 to 2014

### **Iceland Prime Contractors:**

- Manager for development and technical issues from 2010.
- Editor of a new 250 page book on the building of Harpa, the new Icelandic concert Hall
- Research on mould and fungi attack in wooden houses in East Iceland 2012 and 2013.
- Project Manager for the facades of Harpan
- Design Manager for the new Concert hall, Harpa.
- Teaching Design Management in Courses in the University of Iceland.
- Expert for evaluating earthquake damage for Viðlagatrygging Íslands 2009.
- Program director for the 2012 conference of Nordic Road association

1980-2007

### **Employed by Línuhönnun hf, Consulting Engineers, Iceland as Chief engineer, Director 1997 to 2005**

- Research on concrete in geothermal wells.
- Design manager for the competition for the 600 million USD extension of the State hospital in Reykjavik
- Project manager for the preparation of defence against world hazards of influenza in Iceland.
- Member of the project management team for the high rise building project Skuggi 2 and 3
- Project manager for the design and building of a new residence of the Icelandic Ambassador in Berlin, Germany
- Project and contract manager for Samskip hf for a design-building contract with Istak for building a new 25.000 sqm warehouse and headquarter.
- Project manager, design manager and chief designer for the Sundabraut project with bridges, tunnels, immersed tunnels and a lot of intersections 1996-2007.
- Project manager for the development of the Icelandic EXPO2000 pavilion in Hannover.
- Project manager for the initiation of a Technorama Park for Danfoss in Denmark.
- Writing a report to be presented to the high court in Helsingi Finland on a collapse of a steel silo in Finland showing that the findings of the regional court was wrong.
- Project manager for science exhibitions 2004 in Paris and 2006 in London.
- Project manager for the Nato Conference in Reykjavik 2002 and member of the Icelandic Task Force.
- Project and contract manager for the Building Activities of Decode Genetics.
- Leader of the structural design of numerous buildings, some with a very complicated structural system.
- Conceptual design of 50 m high silo, posttensioned and slipformed for aluminium plant in Grundartangi.

- Development of new type of concrete silos made of thin (25 mm) precast shell element made of fiber reinforced concrete and wrapped with small posttensioning cables. Maximum height 5 m, max diameter 16 m.
- Consultant on building physics for the Central Bank in Iceland.
- Quality control on the design of the new City Hall in Reykjavik.
- Working on an international standard for the use of the FEM for concrete constructions.
- Writing two educational books on concrete damages and their repair for the ministry of industrial affairs
- Research on concrete in geothermal wells.
- Consultant on concrete mix-design for numerous projects.
- Pre-design of a 40 m high dam in Roller Compacted Concrete.
- Designing huge number of concrete silos for salmon farms in Iceland.
- Development of new types of pre-cast concrete tanks and silos with external post-tensioning.
- Research on the mixing and use of high strength concrete.
- Research on concrete repair methods, methods for surface treatments, repair materials rendering system, and QA-systems for repair materials.
- Consultant for the repair and rebuilding of some of the oldest buildings in Iceland dating back to 1750. Research on repair methods and studying 2000 years old roman practices.
- Development of rendering system and concrete repair materials.
- Report on concrete damage in several dams in Iceland.
- Writing standard specifications for block pavements.
- Structural design of a house in Wiesbaden, Germany, following an international competition.
- Report on concrete damage in several dams in Iceland.
- Research on chloride induced corrosion in parking garages in Iceland.
- Consultant for a great number of house owners regarding repair and maintenance.
- Design of the first cable stayed bridge to be built in Iceland with pylons in high strength concrete and steel.
- Designing two river bridges with special requirements for aesthetic.
- Designing an arch bridge (Stabbogen) as a composite construction. The first bridge of this type in the world.
- Predesign of three pedestrian bridges, including one suspension bridge.
- Design of the bridge on Vesturlandsvegur over Elliðaár
- Design of the bridge on Vesturlandsvegur over Reykjanesbraut-Sæbraut

- Design of a bridge on Höfðabakki over Vesturlandsveg
- Design of a bridge on Breiðholtsbraut over Elliðaár
- Design of bridge on Bústaðavegur over Kringlumýrarbraut.
- Design of a bridge on Bústaðavegur at Miklartorg.
- The structural design of several buildings, some with a complex structural system.
- 132 kV Transmission line fjord crossing in Western Iceland, design of a new type of dead-end mast built of concrete.
- Writing design specification for anchor plates and rock anchors for guyed towers.
- Writing computer programs for the design of transmission lines.
- Maintenance reports on bridges, dams and a great number of buildings.
- Writing computer programs for bridge design for the Road Authority.

1977-1980

- Working at the Building Research Institute of Iceland, dealing with:
  - *Concrete damages*
  - *Chemical reactions in concrete*
  - *Moisture in concrete*
  - *Testing*
  - *Repair and repair methods*

1966-1967

Teacher of Mathematics and Physics at Menntaskólinn á Akureyri.

### Languages:

	Read	Write	Speak
Íslenska (Native)	X	X	X
English	X	X	X
German	X	X	X
Danish	X	X	X
Norwegian	X	X	X
Swedish	X	X	X

### Honours and Awards:

- Award by the Icelandic Association of mathematics 1966
- Honorary medal of the Icelandic Society of Chartered Engineers 1989.
- Honoured 1989 by the Icelandic Concrete Association.
- Honoured 1993 by the Nordic Concrete Federation.
- 100 years Honour by the Icelandic Engineering Society 2012
- Design Manager of Harpa, the new Icelandic Concert Hall which was awarded the Mies van der Rohe 2013 award for architecture.

### Professional societies:

- Member of the Board of the Innovation Center Iceland 2012
- Member of the Icelandic Board of the Nordic Road Association

- Board member of the Society of Icelandic Chartered Engineers.
- Board member of the Nordic Concrete Federation 1978-1983. Member of the research committee of the Nordic Concrete Federation and chairman 1981-1984.
- Member of the CEB Task Group II/3: Application of the Finite Element Method to two-dimensioned reinforced Concrete Structures.
- Member of the Icelandic Concrete Committee.
- Member of the International Association for Bridge and Structural Engineering (IABSE).
- Various other committees on: cement, building standards and repair methods for concrete damages.

### Publication:

- Klein, Kristjansson et.al.: Zur Berechnung von dünnen Stahlbetonplatten. Forschungsberichte nr. 15, 1974, nr. 25, 1975, nr. 32, 1977.
- Physikalisch und geometrisch nichtlineare Berechnung von Stahlbetonplatten mit Hilfe Finiter Elemente. Dissertation 1977.
- Nonlinear analysis of reinforced concrete plates and slabs including physical and geometric non-linear effects. IASS Symposium, Darmstadt 1978.
- Benutzerhandbuch für das Computerprogram DUPLA (with Dietrich Klein)
- Concrete Damages. BRI-report 1979 (in Icelandic).
- Moisture in Concrete. BRI-report 1980 (in Icelandic).
- Various other BRI-reports (in Icelandic).
- Repair og alcali silica damages in Iceland. BRI-report 1981 (in Icelandic).
- The influence of silica-dust on the properties of cement and concrete. Journal of the Icelandic Engineering Society 1981 (in Icelandic).
- Design of concrete beams under shear. Journal of the Icelandic Engineering Society 1982 (in Icelandic).
- Application of the Finite-Element Method to two-dimensional reinforced Concrete Structures. Bulletin d'Information, no. 159. Comité Euro-International du Béton (CEB) 1983.
- The new bridge on Bustaðavegur. Annual Journal published by the students of the Technical University 1985 (in Icelandic).
- Two books on repair of concrete (in Icelandic).
- The powerplant in Búrfell – RCC dam. Landsvirkjun 1991, with Jón Skúlason and Njörður Tryggvason. (In Icelandic)
- The bridge over Miklubraut. The Yearbook of the Engineering Society 1991 (in Icelandic).
- The durability of concrete in Iceland. Durability of Concrete, ACI SP-131, 1992.
- "Are there no AAR-damages in Iceland?" Some new thoughts on concrete damages in Iceland. Annual Journal published by the students of the Technical University 1993 (in Icelandic).
- "Geothermal Energy". Structural Engineering International 4/1994. IABSE 1994.
- "A New Arch Bridge in Iceland". Structural Engineering International.
- The road intersection Höfðabakki/Vesturlandsvegur, The Yearbook of the Engineering Society 1995/1995 (in Icelandic).
- Can you make errors in designing ventilated claddings. Arkitektur, Verktækni Skipulag, 1995
- The aluminum storage silo in Grundartangi. The Yearbook of the Engineering Society 1997/1998 (in Icelandic).
- Sundabraut – the biggest Icelandic traffic project in the Icelandic history. Annual Journal published by the students of the Technical University 1999 (in Icelandic).
- An Icelandic victory in Hannover, The Yearbook of the Engineering Society 2001 (in Icelandic).

## RK Design

- Many lectures given in Iceland, Scandinavia, Germany and Switzerland.
- Effect of corrosion inhibitors in chloride contaminated concrete in Iceland. Nordic Concrete Research.
- Sundabraut, Upp í vindinn, Annual Journal published by the students of the civil engineering in the University of Iceland 2003 (in Icelandic).
- The crazy department of Línuhönnun. Annual Journal published by the students of the Technical University 2006 (in Icelandic).
- Valhöll á Þingvöllum, úttekt og stefnumótun, með Þorsteini Gunnarssyni. Unnið fyrir forsætisráðuneytið 2005
- The facade of the Icelandic Concert and Conference Center. The Yearbook of the Engineering Society 2010 (in Icelandic)
- When the strings of the glass harp burst. Annual Journal published by the students of the University of Reykjavík 2011 (in Icelandic)
- We built Harpa. Editor. Book published by ÍAV. 250 pages.