TATRO HINDS
ADVANCED CONCRETE ENGINEERING

James K. Hinds, P.E.

PRESENT

Civil engineering consultant specializing in the evaluation, testing, design, and construction of concrete materials for dams and other concrete structures. Contact: mobile (503) 505-1102, email:jim@tatrohinds.com

TECHNICAL EXPERTISE

- Concrete Materials Design
- Concrete Construction
- Mass Concrete
- Roller Compacted Concrete
- Laboratory Testing
- Specifications
- Concrete Repairs
- Shotcrete
- Aggregate Evaluation
- Mixture Design
- Construction Startup
- Test Section Construction
- Prepare Contract Documents
- Concrete Condition Evaluation
- Dam Safety

EDUCATION

B.S. Civil/Structural Engineering, 1977, Portland State University, Portland, Oregon USA Graduate Studies, 1981, Purdue University, West Lafayette, Indiana, USA Graduate Studies, 1981-87, Portland State University, Portland, Oregon USA

Licensed professional engineer in the States of Oregon and Alaska, USA.

CAREER HISTORY

Mr. Hinds is a concrete materials engineer providing concrete materials engineering and consulting services. During his career with the US Army Corps of Engineers (1979 - 2011), served as Corps subject matter expert in Concrete Materials Engineering and co-director of Roller Compacted Concrete Directory of Expertise. Served as a technical resource to other District and Division offices throughout the Corps of Engineers and also provided technical services to various laboratories and other federal, public and private organizations. Served as the Concrete Materials Engineering technical authority, consultant, advisor and reviewer for the planning, design, construction, performance evaluation and repair or rehabilitation of projects. Projects included mass and roller compacted concrete dams, roller compacted concrete overtopping protection and pavements, concrete spillways, outlet structures, powerhouses, energy dissipaters and stilling basins, diversion systems, navigation structures, locks and pumping stations. Also included structural concrete for vertical construction (buildings) including complex structures such as hospitals, underground structures such as tunnels and recreational facilities.

Also served as Dam Safety Program Manager (1997 – 2011) for the Corps of Engineers Portland District Office, responsible for implementation of the dam safety program for an inventory of 21 high hazard dams (concrete and earth), and 5 navigation locks. Responsible for program planning, budgeting, and other program management activities including oversight of inspections and evaluations to ensure structural integrity and the continued safe operation of dams, navigation locks, spillways and other major works within the District.

PROJECT MANAGEMENT

Managed numerous programs and projects including the dam safety assurance program for the Corps of Engineers Portland District. Negotiated and managed contracts for design services.

Currently serving as Chairman of Dam Panel of Experts Team charged by the World Bank with evaluating overall dam safety for a series of eight dam projects in Nigeria.

LABORATORY MANAGEMENT

Effectively managed laboratory testing programs by communicating with technical and client staff, negotiating changes, directing activities, controlling costs, and providing oversight of testing activities. Projects include material and mixture design and performance testing for many roller compacted concrete and conventional concrete dams, investigations into aggregate quality, durability performance, pumping and shotcrete applications, and numerous specialty testing programs customized for the client.

PUBLICATIONS

Eleven publications for technical journals, magazines, and symposiums including the *International Commission of Large Dams, Journal of the American Concrete Institute, Proceedings of the American Society of Civil Engineers, Civil Engineering Magazine, and Concrete International: Design and Construction, Corps of Engineers Guidance Document Program.*

PROFESSIONAL AFFILIATIONS

Member, ACI International, (American Concrete Institute)
Member, United States Society of Dams (USSD)

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Experience Summary
Publications

1. Tatro, Stephen B., and Hinds, James K. "Roller Compacted Concrete Mix Design," Roller Compacted Concrete - III, American Society of Civil Engineers, New York, NY, February 1992.

2. Tatro, Stephen B., Hinds, James K., and Ellis, Stanley "Dam Fast - Design and Construction of the Pajarito Canyon RCC Dam," Proceedings of the 2001 Association of State Dam Safety Officials 2001 Conference, ASDSO, Lexington, KY, (September 2001).

3. Tatro, Stephen B., Hinds, James K., West, Jana L., “Properties of Grout Enriched Roller Compacted Concrete,” 2008 Conference Proceedings, United States Society of Dams, (2008)

4. Tatro, Stephen B., Hinds, James K., West, Jana L., “Properties of Grout Enriched Roller Compacted Concrete,” Technical Report, US Army Corps of Engineers, Walla Walla, WA (2008)

5. Hinds, James K., “Willow Creek Dam – A Look Back”, Proceedings of the International Convention of Long-Term Behavior of Dams, Graz, Austria, International Commission on Large Dams, Paris, France (October 2009)

6. Tatro, Stephen B., Hinds, James K., “Large-Scale Concrete Testing,” 2012 Conference Proceedings, United States Society of Dams, (2012)

7. Contributing author of COE EM 1110-2-2006, “Roller-Compacted Concrete”.

8. Contributing author of COE ETL 1110-2-343, “Structural Design Using the Roller-Compacted Concrete (RCC) Construction Process”.

9. Contributing Author and Editor of COE EM 1110-2-2000, “Standard Practice for Concrete for Civil Works”.

10. Contributing Author of COE Guide Specification CEGS 03701, “Roller-Compacted Concrete for Mass Concrete Construction”.

11. Contributing Author of RCC Paving Guide Specification CEGS 02755, “Roller Compacted Concrete (RCC) Pavement”, revision update.

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Experience Summary
Range of Concrete Experience

Mr. Hinds has been involved in many aspects of concrete evaluation, design, and construction. He has worked on hundreds of projects during his 40-year career involving the planning, design, construction, and rehabilitation of concrete structures. A brief list of technologies and typical projects follow that illustrate the diversity of expertise and experience in concrete technology.

CONVENTIONALCONCRETE, MASS CONCRETE, AND CONCRETE PAVEMENTS

Participated as designer and construction engineer on numerous design and construction teams for RCC dams. Designed and constructed numerous mass concrete structures ranging from massive spillway deflectors, stilling basin repairs, navigation lock monoliths, bridge piers and tremie seals, tunnel linings, and massive structural elements. Design and construction of conventional fixed-form, conventional slip- formed, and RCC pavements for military, industrial, and aviation applications.

ROLLER COMPACTED CONCRETE

Involved in more than 50 RCC projects as RCC designer, project materials engineer, design team member, consultant, expert panel reviewer, and troubleshooter. Several of the more recent projects include Punatsangchhu Dam (Bhutan), Turkey Peak Dam (Texas), Captain William Henry Moore Bridge Replacement (Alaska), Lower Slate Lake Tailing Dams Raise (Alaska), Portugues Dam (Puerto Rico), and Ft Peck Dam (Montana).

MATERIALS AND LABORATORY INVESTIGATIONS

Performed numerous investigations into the availability and quality, of aggregates, cements, fly ashes, admixtures, and placing conditions. Designed laboratory investigation programs for aggregate, concrete, and forensic applications. Implemented the mixture design program for numerous RCC dam projects. Performed laboratory investigations of chemical grout methods of waterstop repair. Currently developing testing equipment and methods for improved testing of shear, direct tension, adiabatic temperature rise, creep of RCC and mass concrete.

OTHER SPECIALTY CONCRETES AND APPLICATIONS

Designed repairs and new installations utilizing a wide range of specialty concretes and specialty applications. They include shotcrete, fiber reinforced concrete, epoxy mortar, polymer impregnation, latex modified concrete, auger-cast piles, slurry walls, shrinkage compensating concrete, non-shrink grout, tremie concrete, underwater concrete, and self-consolidating concrete.

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