

CURRICULUM VITAE
Dr. Ashraf M. S. Biddah
Professor of Structural Engineering



1. PERSONAL DATA:

NAME: Ashraf M. S. Biddah

DATE OF BIRTH: March 18, 1967.

NATIONALITY: Egyptian.

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- Heliopolis Cairo.
- Mobile +20 100 1437595
- E-mail: abiddah@gmail.com,

2. ACADEMIC/PROFESSIONAL PARTICULARS

Field of Specialization: Structural engineering

(a) ACADEMIC QUALIFICATIONS

- Ph.D. in Civil Engineering, McMaster University, Hamilton, Ontario, Canada, November 1997. Dissertation Title: "Seismic Behaviour of Existing and Rehabilitated Reinforced Concrete Frame Connections"
- M.Sc. in Structural Engineering, Ain Shams University, Cairo, Egypt, October 1992. Dissertation Title: "Torsional and Distortional Behaviour of R.C. Box Girders with Different Cantilever Widths"
- B.Sc. with Honor Degree in Civil Engineering (1st of the class of 137), Structural Engineering Division, Ain Shams University, Cairo, Egypt, June 1989.

(b) ACADEMIC HONORS, AWARDS AND FELLOWSHIPS

- The government Award of Excellence in Undergraduate Studies, Cairo, Egypt, 1984-1989.
- Centennial Scholarship, McMaster University, Canada, 1994.
- Prestigious Dalley Scholarship, McMaster University, Canada, 1994-1995.
- The Natural Sciences and Engineering Research Council of Canada, NSERC Scholarship, 1995-1997.
- The Dean's Award of Excellence in Graduate Research for Demonstrating Outstanding Achievement in Graduate Research and Displaying Scholarly Promise, McMaster University, Canada, 1997.
- The Natural Sciences and Engineering Research Council of Canada, NSERC Postdoctoral Fellowship, University of Toronto, Canada, 1997-1998.
- Chair of two technical sessions at the Response of structures to extreme loading Conference, August 2003, Toronto, Canada.
- Member of the international scientific committee of the international conference on concrete repair, rehabilitation and retrofitting, South Africa, November 2005. , representing not only UAE but also the Arab world in this conference.
- Invited speaker at the International Workshop on Civil Engineering Infrastructure systems, Dubai, May 2006.
- Reviewer of the 8th International Conference on Multi-purpose High-Rise Towers and Tall Buildings, Abu Dhabi, December 2007.

(c) MEMBERSHIP OF PROFESSIONAL BODIES

- **Member of the Professional Engineer by Professional Engineers in Ontario, Toronto, ON, Canada.**

- **Member of the American Concrete Institute, ACI, USA.**
- **Member of the International Association for Bridge and Structural Engineering, IABSE, Switzerland.**
- Fellow of the Natural Sciences and Engineering Research Council of Canada.
- Member of the Canadian Association for Earthquake Engineering, Canada.
- Member of the International Building Performance Simulation Association (IBPSA), USA.
- Board member of the International Building Performance Simulation Association-UAE chapter (IBPSA-UAE).
- Member of the Egyptian Engineering Syndicate, Egypt.
- Member of the Egyptian Engineering Association (Civil Engineering Association), Egypt.
- Member of the Reinforced Concrete Research Unit, Ain Shams University, Egypt.

3. CAREER DETAILS:

(a) PRESENT APPOINTMENT

Professor, Department of structural Engineering, Ain Shams University.

(b) PREVIOUS APPOINTMENTS

- 2009 – Present: Professor of Concrete Structures, Struc. Eng. Dept., *Ain Shams University, Cairo, Egypt.*
- 2011 – 2014: Professor of Concrete Structures, Director of Building and Construction Center of Excellence, Civil Eng. Dept., *College of Engineering and computer Science, Abu Dhabi University, Abu Dhabi, UAE*
- 2009 – 2011: Associate Professor, Civil & Env. Engineering, *UAE University, Al Ain, UAE.*
- 2001 – 2009: Associate Professor, Struc. Eng. Dept., *Ain Shams University, Cairo*, seconded to the Civil & Env. Engineering, *UAE University, Al Ain, UAE.*
- 2001 – 2003: Assistant Professor, Struc. Eng. Dept., *Ain Shams University, Cairo*, seconded to the Civil & Env. Engineering, *UAE University, Al Ain, UAE.*
- 1998-2001: Assistant Professor, Struc. Eng. Dept., *Ain Shams University, Cairo, Egypt.*
- 1998: Post Doctoral Fellow, Civil Eng. Dept., *McMaster University, Ontario, Canada.*
- 1997-1998: Post Doctoral Fellow, Civil Eng. Dept., *University of Toronto, Ontario, Canada.*
- 1993-1997: Teaching & Research Assistant, Dept. of Civil Eng., *McMaster Univ., Ontario, Canada.*
- 1992-1993: Teaching & Research Assistant, Struc. Eng. Dept., *Ain Shams University, Cairo, Egypt.*
- 1989-1992: Full-time Instructor (Demonstrator), Struc. Eng. Dept., *Ain Shams University, Cairo, Egypt.*

4. TEACHING ACTIVITIES:

(A) TEACHING PHILOSOPHY STATEMENT

During the past twenty years, I have conscientiously tried to develop and improve my teaching competencies. To foster that, I adopted two parallel paths, namely; conducting creative research, and engaging the practical application through consultancy projects. I was also keen to keep up on new developments about teaching-learning process and on effective teaching methodologies for engineering education.

My teaching philosophy for structural engineering courses is that “Structural engineering courses are addressing practical issues with an academic education emphasis”. Because of this, I strive to present a balance and synthesis between theory and practice in all of the courses I teach.

In terms of teaching strategies, I adopt the following seven principles:

- 1- Encouraging contacts between students and faculty.
- 2- Developing reciprocity among students (group collaboration, mini-seminars, etc).

- 3- Using active learning techniques (problem-solving, critical thinking, decision-making, etc.). This can be achieved through the use of assignments, team projects, laboratory tests, field trips, external speakers, etc.
- 4- Giving prompt feedback and thus leading to continuous assessment and redirection.
- 5- Emphasizing time on task.
- 6- Communicating high expectations (expect more and you will get more).
- 7- Respecting diverse talents and ways of learning.

In terms of instructional methods, my personal feeling is that a mix of presentation techniques is the most effective. I have been effectively using the traditional techniques such as the blackboard and overhead projectors. Students in the theoretical-based classes prefer this combination. On the other hand, I have used the data-show/laptop setup to instruct the use/application of specific professional programs such as PROKON, SAP2000, STAADIII and AutoCAD in my classrooms. In the current courses that I'm teaching,

I've adopted the BLACKBOARD utilities for effective management of the course resources (notes, assignments, solutions, etc.) and outcomes (grades, feedback, discussion groups, etc.).

I view teaching as a core activity in my academic career. My love for teaching was a primary motivation in my decision to seek M.Sc. and Ph.D. degrees, and remains the most challenging and satisfying part of my professional life. I am very conscientious about my teaching responsibilities and work hard to give students the best educational opportunities available.

(B) COURSES TAUGHT

- Designed and Taught Several Undergraduate and Graduate Courses:

i- Prof. at Abu Dhabi University:

Reinforced Concrete Design I (CIV 318), Mechanics of Materials (CIV 206),

- Supervisor of Graduation Design-Oriented Projects
- Participated in the preparation of the exit exam required for the graduation project
- Arranged many scientific visits for students to several construction sites in UAE to visualize the learned materials.

ii- Assistant/Associate Prof. at United Arab Emirates University:

Reinforced Concrete Design II (CIVL 412), Special topics in Structural Engineering (CIVL 510), Structural Analysis I (CIVL 3103), Math and Engineering Application I (Math 1094 co-teaching), Mechanics of Materials (GENG 305), Foundation Engineering (CIVL 442) and Special Topics in Soil Mechanics and Foundation Engineering (CIVL 541), Thesis supervision (MTSE 660), Rehabilitation of structures for Masters level (CIVL 716)

- Supervisor of Graduation Design-Oriented Projects I and II (CIVL 585, 590)
- Participated in the preparation of the exit exam required for the graduation project II
- Arranged many scientific visits for students to several construction sites in UAE to visualize the learned materials.

iii- Assistant /Associate Prof. at Ain Shams University:

Design of R.C. Elements, Design of Special R.C. Structures, Design of Prestressed Concrete Structures, Design and Analysis of high rise buildings (Graduate course)

iv- Post Doctor at McMaster University:

Rehabilitation of Structures (CE701)
Engineering Economics (4B03)

v- Post Doctor at University of Toronto:

Mechanics of Structures (CIV 101)

vi- TA at McMaster University:

Design of Reinforced Concrete Structures (3J03), Engineering Synthesis (4R04), Modern methods of Structural Analysis (4K04), Engineering Economics (4B03)

vii- TA at Ain Shams University:

Design of R.C. Elements, Design of Special R.C. Structures, Design of Prestressed Concrete Structures

(C) TRAINING, COURSES TO IMPROVE TEACHING AND PROFESSIONAL COMPETENCE

- Attended a training program for teaching assistants and instructors, Ain-Shams University, Cairo, Egypt, 1991.
- Attended workshop in the new aspects in the Egyptian reinforced concrete design code, Egyptian Engineers Society, Cairo, Egypt, 1992.
- Attended a short training on the base isolation of buildings to reduce seismic forces, Missassuga, Canada, 1996.
- Attended a special training course at McMaster University on new educational tools, Ontario, Canada, 1996.
- Attended the international workshop on structural composites for infrastructure applications, Housing and building center HBRC, Cairo, Egypt, 2001.
- Attended a training course on uses of multimedia in teaching at United Arab Emirates University, UAE, 2001.
- Participate in a seminar on design of buildings using thermal insulation materials and systems, Dubai Municipality, 2002.
- Attended workshops and seminars at the United Arab Emirates on developing new approach to engineering education and professional competence, 2002.
- Attended forum on developing international internship program, and workshop on making internship program more effective, 2003.
- Attended workshop on "From teaching to learning: the concept of active learning", 2003.
- Attended the Active Learning Workshop on how to apply active learning concepts to all laptop and non-laptop courses and how to transfer from the currently applied traditional course content to those of active learning, 2004.
- Attended Workshop on the design of post-tensioned floor systems using ADAPT software, Society of Engineers – UAE – November 2005.
- Attended Workshop on EcoSmart SOS concrete contribution to the Environment, Al Hosn University, Abu Dhabi, March 2009.
- Attended seminar on Smart Building technology – Structural & Seismic Safety, in Abu Dhabi organized by the Ministry of Presidential Affairs and the National Center of Meteorology and seismology in UAE, May 2009.
- Attended the Engineering Education Symposium for two days in Al Ain, May 2009.
- Attended and organized workshop on Post tension slabs in UAE for two days, May 2009.
- Attended the international concrete sustainability conference in Dubai, UAE for two days, December 2010.

(D) USE OF INNOVATIVE TEACHING METHODS, INCLUDING USE OF IT

- Carried out an Innovation (Development) project for the course "CIVL 412 Reinforced Concrete Design II" to allow student visualize the concrete elements during learning using photos, clips and active learning aids.

- Developed the foundation engineering course (CIVL 442) to be taught as laptop courses. The teaching and learning approach are as follows:

Classroom Students' Activities during Lectures:

- 1- PowerPoint presentations were developed to illustrate theoretical information concerning basic concepts of the course. This familiarizes students with the course topics and fundamentals.

- 2- New course materials including pictures, video clips and/or animations were developed to illustrate course basics.
- 3- To inspire critical thinking and problem solving based learning, students' brainstorming activities are developed and used every 10-15 minutes during the lecture. The students may be required to use their laptops while conducting these activities.
- 4- New problems relevant to course basics were developed. Students were asked to work individually to solve these problems. The instructor does not solve these problems to students but only guides them while solving the problems. New design examples were also developed to guide the students through solution steps.
- 5- Various course-projects were developed based on real-world problems, and used to integrate the knowledge delivered during the term. Students were asked to work in groups, 3-5 students each, to solve these projects. These group activities enhance the cooperative learning and attenuate the spirit of teamwork. Each group is asked to present their work on a quarter-term basis. These presentations derive brainstorming discussions during the lecture.
- 6- On line quizzes were developed and used occasionally followed by brainstorming discussions. These activities attenuate critical thinking and use of new technology during lecture time.

Students' Activities outside Class:

- 1- Students used their laptops to download available course materials, posted assignments, and posted handouts from Blackboard.
- 2- The students occasionally used available software such as Excel and SAP 2000 to solve some problems and periodically use the Blackboard's Digital Drop-box to submit their work electronically.
- 3- The students are asked to prepare course-projects' drawings on AutoCad and course-projects' presentations on PowerPoint.

The students' performance was assessed by homework assignments, quizzes, mid-term and final exams, students' in-class participation and course-projects.

(E) RESEARCH STUDENTS SUPERVISED

Supervisor of 4 Masters of Engineering students.

Mohamed Abdul Halim Hassan	1999-2002	Co-supervisor
Soliman Hussain Ahmed	2000-2003	Co-supervisor
Stephen Craig Raynor	2004-2007	Principle supervisor with Dr.
Khaled El-Sawy		

(F) COMPLETED THESIS TITLES

Completed four masters of Engineering thesis:

- 1- MSc Thesis "Factors affecting ductility of concrete columns of medium and high strength", by Mohamed Abdul Halim Hassan, 2002.
- 2- MSc thesis "Strengthening of concrete beams subjected to torsion and bending using Glass fiber, by Soliman Hussain Ahmed, 2003.
- 3- MSC Thesis "Experimental Investigation and Numerical Modeling of Hybrid Glass/Carbon FRP Section Combined with Concrete Slab", by Stephen Craig Raynor, 2007.

5. RESEARCH ACTIVITIES:

(A) RESEARCH INTEREST

- Repair and strengthening of reinforced concrete elements using advance composite materials.
- Strengthening of reinforced concrete beams using polycarbonate sheets.
- Effect of transverse reinforcement on the behaviour of high strength concrete columns.
- Torsional behaviour of concrete beams.
- Seismic analysis of reinforced concrete structures.
- Effect of base isolation on the behaviour of buildings in seismically active regions.

- Modeling of building structures and bridges.
- Performance of buildings in severe environment.

(B) PUBLICATIONS

Published **75** technical articles summarized as follows (see **Appendix A** for full list):

16	Articles in International Refereed Journals
34	International Referred specialized Conference Papers
24	National Refereed Conference Papers
1	Edited Book

(C) RESEARCH GRANTS

P.I. and Co P.I. in Several Research Projects:

- Principal Investigator of the National Research Foundation (NRF) for the research titled "Performance of Near Surface Mounted (NSM) Rehabilitation System under Corrosive Environment of UAE" RSA-1108-00186. (2010).
- "Strengthening RC rectangular and Square Columns using NSM Steel bars and CFRP wrapping", Project funded by United Arab Emirates University, UAE, (24,000 Dhs) 2008-2009. (Principal Investigator).
- "Effect of CFRP strengthening on deflection of RC Slabs", Project funded by United Arab Emirates University, UAE, (30,000 Dhs) 2007-2008. (Principal Investigator).
- "Performance of Corroded RC Columns Repaired with FRPs under Flexure and Axial Compression", Project funded by United Arab Emirates University, UAE (30,000 Dhs) with Dr. Tamer El Maaddawy, 2005-2006. (Co-Principal Investigator).
- "Design Guidelines and Long Term Performance of Concrete Structures Strengthened Using FRP", Project externally funded by Abu Dhabi Company for Onshore Oil Operations, ADCO, 3 years, (799,200.00 Dhs) with Dr. Saud Aldajah, 2005-2009. (Co-Principal Investigator).
- Cracks and Deterioration of Structure in UAE and Qatar: Causes, Repair Methods, and Deterrence Techniques, Cooperative research project between UAE University and Qatar University, two years, (300,000 Dhs) with Dr. Aly Nazmy, 2003-2005. (Principal Investigator).
- Strengthening of opening moments joints in reinforced concrete frames using CFRP, Project funded by United Arab Emirates University, UAE, (20,000 Dhs) 2004-2005. (Principal Investigator).
- Strengthening of inadequate anchorage of beam reinforcement in beam-column joints using carbon fiber reinforced polymers L-shaped plates, Project funded by United Arab Emirates University, UAE, (20,000 Dhs) 2003-2004. (Principal Investigator).
- The use of composite materials for the repair and rehabilitation of concrete structures at ASAB and JEBEL DHANNA areas, Project externally funded by Abu Dhabi Company for Onshore Oil Operations, ADCO, UAE, (148,000 Dhs) with Dr. Adel Hammami, 2003. (Co-Principal Investigator).
- Punching shear strengthening of reinforced concrete slabs using FRP plates, Project funded by United Arab Emirates University, UAE, (20,000 Dhs) 2002-2003. (Principal Investigator).
- Using FRP members in composite action with reinforced concrete slabs to withstand the harsh environment in the Arabian Gulf region, Project funded by United Arab Emirates University, UAE, (20,000 Dhs) 2001-2002. (Principal Investigator).
- Behaviour of Concrete Box Culverts and their Strengthening by Fibre Reinforced Plastics, Project funded by *Ministry Of Transportation Of Ontario*, Toronto, Canada, (CN\$ 60,000) with Dr. Shamim Shaikh, 1998. (Co-Principal Investigator).
- Seismic assessment of safety-related structures: Response of the PRD frame at Pickering Nuclear Power Plant in Canada, Project funded by Atomic Energy of Canada, Canada, (CN\$ 50,000) with Dr. Ahmed Ghobarah, 1996-1997. (Co-Principal Investigator).

(D) MEMBERSHIP OF CONFERENCE COMMITTEES

- General Secretary and member of the organizing and scientific committee at the Ninth Arab Structural Engineering Conference (Nov. 29 – Dec. 1, 2003) Abu Dhabi, UAE.
- Session Chairman, Response of structures to extreme loading Conference, August 2003, Toronto, Canada.

- Member of the International Scientific Committee and Advisory Board of the International Conference on Concrete Repair, Rehabilitation and Retrofitting, Cape Town, South Africa, November 2005.
- Member of the Scientific Committee of the 5th middle east symposium on Structural Composites for Infrastructure Applications, Hurghada, Egypt, May 2008.
- Reviewer for the International Conference on Composite Science & Technology (ICCST/7) – Sharjah January 2009.
- Co-chair and member of the scientific Committee of the first middle east conference on smart monitoring, assessment and rehabilitation of civil structures, SMAR 2011, Dubai UAE, 2011.

(E) SERVICE AS TECHNICAL REVIEWER

JOURNALS

- UAE Engineering Scientific Journal.
- Structural Engineering and Mechanics Journal.
- Steel and Composite Structures International Journal
- NED University Journal of Research
- The journal "Bulletin of the Polytechnic Institute of Iasi"

CONFERENCES

- The Nine Arab Structural Engineering Conference, Abu Dhabi, UAE, November 2003.
- The International Conference on Concrete Repair, Rehabilitation and Retrofitting, Cape Town, South Africa, November 2005.
- The seventh International Conference on Multi-purpose High-rise towers and Tall Buildings, Dubai, UAE, December 2005.
- The 8th International Conference on Multi-pupose High-Rise Towers and Tall Buildings, Abu Dhabi, December 2007
- The 5th middle east symposium on Structural Composites for Infrastructure Applications, Hurghada, Egypt, May 2008.
- The International Conference on Composite Science & Technology (ICCST/7) – Sharjah January 2009
- The eleventh Arab Structural Engineering Conference, Dhahran, Saudi Arabia, October 2009.
- The first middle east conference on smart monitoring, assessment and rehabilitation of civil structures, SMAR 2011, Dubai UAE, 2011

TECHNICAL RESEARCH PROPOSALS

- Review of interdisciplinary research proposal from Sultan Qabous University "Design And Construction Of Greenhouses For Arid Regions: Phase 2" July 2008.

(F) INVITED PRESENTATIONS AT SCIENTIFIC MEETINGS/WORKSHOPS

- Delivered a lecture entitled "Effect of Earthquakes on Buildings" as part of one day workshop on Earthquakes: facts and effects, at the Department of Geology, UAE University, December 2002.
- Delivered a seminar at the Public Work Department (PWD) of Abu Dhabi presenting the new technique of strengthening concrete structures using carbon and glass fibers, 2003.
- Speaker of a short course on "Repair and strengthening of concrete structures with FRP composites" in Dubai shared between the Special Programs and Continuing Education Center and Society of Engineers – UAE, 2004.
- Delivered a seminar at Abu Dhabi Police, Ministry of Interiors, presenting the new technique of strengthening concrete structures using carbon and glass fibers, 2005.
- Speaker of 3 days workshop on "Maintenance and Repair of Reinforced Concrete Structures" in Al Ain for female students at UAE University arranged by Youth Care and Students Activities, American Student chapter for Civil Engineers – UAE, 2005.
- Speaker at AUD-NSF International Workshop on Civil Engineering Infrastructure Systems, High Performance materials, Monitoring and Management, May 2006. Lecture entitled "FRP Repair and Strengthening in the UAE".
- Delivered a seminar at Dubai Municipality presenting the new technique of strengthening concrete structures using carbon and glass fibers, May 2008.
- Delivered a workshop on understanding structural drawings, Three days workshop, April 2009, Civil Engineering Department, UAE University, Al Ain.

- Delivered two lectures on the structures and safety for public at the first Al Ain Municipality Month activities, Al Ain, March 2009.

6. SERVICES:

(A) UNIVERSITY SERVICE

- Member and/or head of various college and department committees (such as: College and department textbooks committees, College Technical Inspection committee, Department laboratory committee, Department Curriculum committee, Department Educational Outcome Assessment committee, ABET Re-accreditation committee, Department community service Committee) and Safety committee.
- Head of the UAE University grand receiving committee for inspecting and checking construction works and renovations done by contractors for the University Campus facilities such as laboratories, classrooms, playgrounds, student housing, educational centers. Projects referred to the Grand Receiving Committee have a minimum cost of Dhs.250,000.0 (3Cr. Hrs) (January 2002 –November 2008).
- Member of the University large projects Committee Chaired by the University Secretary General (January 2002 – November 2008).
- Member of the New Campus Relocation Committee Chaired by The University Secretary General (September 2007-now)
- Graduation project advisor.
- Visiting advisor for industrial trainee.
- Academic advisor for several students.

(B) COMMUNITY SERVICE

- Participated, as a member of the Egyptian code preparation committee, in preparing the specifications and code provisions in the field of earthquake resistance and Reinforced concrete structural design and construction, 1998-now.
- Wrote a couple of essays for different national newspapers (El-Khaleg newspaper and El-Ettihad newspaper) which focused on the latest local earthquake in UAE, 2002.
- Conducted a site inspection visit to Fujairah on the 3rd April 2002 as a member of the scientific group chosen by the UAE University Vice Chancellor to assess the recent earthquake occurrences and advise the relevant authorities through a seminar on our assessment and evaluation of the same.
- According to an official demand by the government of Fujairah, prepared a scientific report on the damage occurred in buildings and structures due to the recent earthquake hit the Eastern region of UAE, 2002.
- Published a long article for the national newspaper (Al-Khaleej) which focused on the latest local earthquake in UAE (24/1/2003), (12/5/2009).
- Published an article in the Contractor news magazine about the advantages of advance composite materials in strengthening concrete structures, February 2003.
- Arranged for Seminars in the Civil & Env. Engineering Dept. inviting experts in different fields to involve our graduates and students with the latest developments and with practical issues, March 2004.
- Member of the UAEU-Dubai Municipality Scientific committee and the UAEU-Dubai Central Laboratories Scientific Committee.

7. CONSULTING\ INDUSTRIAL EXPERIENCE:

Independent consultant to regional and International organizations and consultancies. Official consultant to several agencies. Designed and provided specialized technical solutions, reviewed designs and specifications and supervised the execution of many multi-million dollar projects. (see **Appendix B** for full list).

8. COMPUTER SKILLS:

- Experience with wide variety of Engineering and commercial software including: AUTOCAD, ROBOT MILLENNIUM, PROKON, PCACOL, RESPONSE, ADOSS, SURFER, EXCEL, QUATTRO PRO, MICROSOFT WORD, WORD PERFECT, POWER POINT, ADOB ACROBAT, MATLAB.
- Proficient in finite element and structural analysis with software packages: DRAIN-2DX, IDARC, PC-ANSR, SARCF, CANNY, STAADPRO, SAP2000.

- Capable of programming on FORTRAN and BASIC.
- Experienced operating systems: MS-DOS and Windows 98/2000/XP.

9. DESIGN CODES EXPERIENCE:

- Building Codes: ACI-318-2005 (USA), UBC – 1997 (USA), CAN/CSA-S16-2001 (Canada), BS 8100/1997 (UK).
- Bridge Codes: AASHTO-LRFD-1998 (USA), CAN/CSA-S6-2000 (Canada), BS 5400-3:2000 (UK).

Appendix A: LIST OF PUBLICATIONS

International Refereed Journal

- 1- Ghobarah, A., Aziz, T.S. and Biddah, A., "Seismic Rehabilitation of Reinforced Concrete Beam-Column Connections", *Special Issue on repair and rehabilitation research for seismic resistance of structures*, Earthquake Spectra, Vol. 12, No. 4, pp. 761-780, November 1996
- 2- A. Ghobarah, A. Biddah and M. Mahgoub, "Rehabilitation of Reinforced Concrete Columns Using Corrugated Steel Jacketing", *Journal of Earthquake Engineering*, Vol. 1, No. 4, 1997, pp. 651-673
- 3- A. Biddah, A. Ghobarah and T. Aziz, "Upgrading of Non-Ductile Reinforced Concrete Frame Connections", *Journal of Structural Engineering, ASCE*, Vol. 123, No. 8, August 1997, pp. 1001-1010
- 4- A. Ghobarah, T.S. Aziz and A. Biddah, "Rehabilitation of Reinforced Concrete Frame Connections Using Corrugated Steel Jacketing", *American Concrete Institute, ACI, Structural Journal*, Vol. 94, No. 3, May-June 1997, pp. 283-294
- 5- A. Ghobarah, A. Biddah and M. Mahgoub, "Seismic Retrofit of Reinforced Concrete Columns Using Steel Jackets", *The European Earthquake Engineering Journal*, Vol. 11, No. 2, 1997, pp. 21-31
- 6- A. Biddah and A. Ghobarah, "Modelling of shear deformation and bond slip in reinforced concrete joints", *Journal of Structural Engineering and Mechanics*, Vol. 7, No. 4, April 1999, p. 413-432
- 7- A. Ghobarah and A. Biddah, "Dynamic analysis of reinforced concrete frames including joint shear deformation", *Engineering Structures Journal*, Nov.1999, Vol. 21, No. 11, pp. 971-987
- 8- A. Ghobarah, H. Abou-Elfath and A. Biddah, "Response-based damage assessment of structures", *Journal of Earthquake Engineering and Structural Dynamics*, Jan. 1999, vol. 28, No. 1, pp. 79-104
- 9- A. Biddah and A. Ghobarah, "Strengthening of inadequate anchorage of beam reinforcement in beam-column joints," *Emirates Journal for Engineering Research*, Vol. 9, No. 2, pp. 83-89, 2004
- 10- A. Biddah, "Behaviour of Pultruded FRP Section in Composite Action with Concrete Slab", *Port Said Engineering Research Journal*, Vol. 9, No. 1, 2005
- 11- A. Biddah, "Structural Reinforcement of Bridge decks Using Pultruded GFRP Grating," *Journal of Composite structures*, Volume 74, 2006, pp. 80-88.
- 12- A. Biddah and A. Ghobarah, "Rehabilitation of inadequate anchorage of beam reinforcement in beam-column joints," *The European Earthquake Engineering Journal*, Vol. 20, No. 2, pp. 39-46, 2006.
- 13- Saud Aldajah, Ammar Al-omari and Ashraf Biddah, "Accelerated Weathering Effects on the Mechanical and Surface Properties of CFRP Composites", *Materials and Design Journal*, Elsevier, Volume 30, Issue 3, March 2009, p. 833-837.
- 14- Saud Aldajah, Amr El-dieb, Ashraf Biddah and Ammar Al-omari,, "Nonlinear FEM Analysis of CFRP Strengthened Concrete Beams", *Construction Materials Journal*, Vol. 163, Issue CM4, November 2010, pp. 231-238.
- 15- A. Biddah, K. El Sawy, S. Rani and T. Shaikhoon, "Strengthening of pultruded glass FRP section combined with concrete slab using CFRP plates", *Journal of Civil Engineering and Architecture*, ISSN 1934-7359, USA, Vol. 4, No. 7, serial No. 32, July 2010, pp.1-8.
- 16- A.S. El-Dieb, S. Aldajah, A. Biddah, and A. Hammami , "Long-Term Performance of RC Members Externally Strengthened by FRP Exposed to Different Environments", *The Arabian Journal for Science and Engineering (AJSE)*, 2012.

International Refereed Specialized Conference Papers

- 1- M.M. El-Hashimy, S.A. El-Beairy, M.I. Soliman and A. Biddah, "Effect of Cantilever Width on the Behaviour of Box Girder Bridges", *Fourth Arab Structural engineering Conference*, Cairo, Egypt, Vol. 1, pp. 118-137, November 1991
- 2- M.M. El-Hashimy, S.A. El-Beairy, M.I. Soliman and A. Biddah, "Design of reinforced Concrete Box Girder Bridges", *International Colloquium on Structural Engineering*, Cairo, Egypt, Vol. 2, pp. 937-954, April 1992
- 3- M.M. El-Hashimy, S.A. El-Beairy, M.I. Soliman and A. Biddah, "How Important the Secondary stresses are in Reinforced Concrete Box Girders?", *International Colloquium on Structural Engineering*, Cairo, Egypt, Vol. 1, pp. 1-15, April 1992
- 4- M.I. Soliman, A. Biddah and F.A. Rehim, "Different Aspects affecting the Torsional Stiffness of Reinforced Concrete Box Girder Bridges", *Fifth International Colloquium on Concrete in Developing Countries*, Cairo, Egypt, Vol. 1, pp. 289-301, January 1994
- 5- M.I. Soliman, A.A. Zeid and A. Biddah, "Importance of Detailing in Reinforced Concrete Cellular Bridges", *Fifth International Colloquium on Concrete in Developing Countries*, Cairo, Egypt, Vol. 1, pp. 342-440, January 1994
- 6- M.I. Soliman, A.A. Zeid, A. Biddah, "Code Provisions for Additional Stress in Box girder Bridges", *Fifth International Colloquium on Concrete in Developing Countries*, Cairo, Egypt, Vol. 1, pp. 478-492, Jan. 1994. (Co-operation between the Egyptian Society of Engineers and the Canadian Society for Civil Engineering)
- 7- M.I. Soliman, A. Biddah, "Design of Cellular Structures", *4th International Conference on Short and Medium Span Bridges - CSCE - Halifax - Nova Scotia - Canada*, August 1994
- 8- A. Ghobarah, A. Biddah, M. Elattar and M. K. ElSamny, "Rational Approach for Planning of Structural Retrofit", *Al-Azhar Engineering Fourth International Conference*, Cairo, Egypt, Vol. 3, pp. 651-663, December 1995
- 9- T.S. Aziz, A. Ghobarah and A. Biddah, "Seismic Assessment of Existing Reinforced Concrete Frame Connections", *Al-Azhar Engineering Fourth International Conference*, Cairo, Egypt, Vol. 3, pp. 268-276, December 1995
- 10- A. Ghobarah, C. Pilette and A. Biddah, "Seismic Assessment of Safety-related Structure: Laboratory Testing of the PRD Frame at Pickering NPP", *13th International Conference on Structural Mechanics in Reactor Technology (SMiRT)*, Porto Alegre RS, Brazil, pp. 223-228, Aug. 1995
- 11- Ghobarah, A., Aziz, T.S. and Biddah, A., "Rehabilitation of Reinforced Concrete Beam-Column Joints", *Eleventh World Conference on Earthquake Engineering*, Acapulco, Mexico, Paper number 1394, 8 pages, June 1996
- 12- Ghobarah, A., Aziz, T.S. and Biddah, A., "Seismic Behaviour of Rehabilitated Reinforced Concrete Connections", *Cairo First International Conference on Concrete Structures*, Cairo, Egypt, Vol. 1, pp. 1-11-21, January 1996
- 13- A. Biddah, A. Ghobarah, "Rehabilitation strategy for medium-rise reinforced concrete buildings", *Al-Azhar Engineering Fifth International Conference*, Cairo, Egypt, Vol. 3, Dec. 1997
- 14- A. Ghobarah, A. Biddah and C. Pilette, "Seismic assessment of safety-related structures: Response of the PRD frame at Pickering NPP", *Fourteenth International Conference on Structural Mechanics in Reactor Technology (SMiRT)*, Lyon, France, Division "K", Paper 303, pp. 1-8, August 1997
- 15- Shamim Sheikh and Ashraf Biddah, "Fibre reinforced plastics (FRP) as an economical alternative for construction and rehabilitation" *International workshop on concrete technology for a sustainable development in the 21st century*, Svolvaer, Lofoten Islands, Norway, June, 1998
- 16- A. Biddah and S. Sheikh, "Strengthening of concrete Box culverts using FRP", *8th Arab structural Engineering Conference*, Cairo, Egypt, Oct. 2000, Vol. 4, pp. 1643-1654
- 17- Shamim Sheikh and Ashraf Biddah, "Fibre reinforced plastics (FRP) as an economical alternative for construction and rehabilitation" *Concrete technology for a sustainable development in the 21st century*, editor: Odd E Gjorv and Koji Sakai publisher: E&F Spon, pp. 386, 2000
- 18- O. El. Nawawy, O. H. Abdel-wahed, A. Biddah and M. Allam, "Effect of the transverse reinforcement on the behaviour of ordinary and high strength concrete columns", *Second International Conference on Engineering Materials*, San Jose, California, USA, Vol. 1, August 2001
- 19- A. Biddah & A. Ghobarah, "Repair and strengthening of Concrete Beams using Fiber

- Reinforced Plastics FRP Laminates”, *9th International Colloquium on Structural and Geotechnical Eng.*, April 2001, Cairo, Egypt
- 20- A. Biddah, “Polycarbonate as a New Innovative Material in Strengthening Reinforced Concrete Beams”, *The Second International Conference on Advances in Structural Engineering and Mechanics (ASEM'02)*, August 2002 Busan Convention Center, Busan, Korea, session W4C (Maintenance and Rehabilitation) abstract P.42, CD Ref
 - 21- A. Biddah, S. El-Beairy and S. Hussien, “Repair and Strengthening of Bridge Concrete Beams Subjected to Shear and Torsion Using FRP”, *6th International Conference on Short and Medium span Bridges published by the Canadian society for Civil Engineering*, July 2002, Vol. 2, pp. 971-979, Vancouver, Canada
 - 22- Ashraf Biddah, "Using pultruded fiberglass greating as reinforcement for one-way concrete slabs", *10th International colloquium on structural and geotechnical engineering (ICSGE)*, April 2003, Cairo, Egypt
 - 23- Ashraf Biddah, "Experimental investigation of pultruded FRP section combined with concrete slab", *6th International symposium on fibre-reinforced polymer (FRP) reinforcement for concrete structures (FRPRCS-6)*, July 2003, Singapore
 - 24- A. Biddah and A. Ghobarah, "Rehabilitation of the anchorage of bottom reinforcement into beam-column joint using CFRP L-shaped plates", *Response of structures to extreme loading Conference*, August 2003, Toronto, Canada
 - 25- A. Biddah and A. Ghobarah, “Strengthening of inadequate anchorage of beam reinforcement in beam-column joints,” *Proceedings of the 9th Arab Structural Engineering Conference*, Vol. 1, pp. 503-510, Abu Dhabi, UAE, Nov. 2003
 - 26- A. Biddah, "Punching Shear Strengthening Of Reinforced Concrete Slabs Using CFRP L-Shaped Plates," *4th International Conference on Advanced Composite Materials in Bridges and Structures, ACMBIS-IV*, Calgary, Canada, July 2004
 - 27- A. Biddah, "Innovative method of strengthening Punching Shear of Reinforced Concrete Slabs," *Global Construction: Ultimate Concrete Opportunities Conference*, Scotland, UK, July 2005, Thomas Telford.
 - 28- Dr. Saud Aldajah, Dr. Ashraf Biddah, Ammar Al-omari, Dr. Adel Hammami, “Experimental and FEM Study of the Flexural Behavior of Carbon Fiber Reinforced Polymers Strengthened Concrete Structures”, *COBRAE Conference 2007, Benefits of Composites in Civil Engineering*, March 2007, University of Stuttgart, Stuttgart, Germany
 - 29- Saud Aldajah, Ammar Al-omari and Ashraf Biddah, “Effects of the accelerated weathering on the mechanical and surface properties of CFRP composites”, *11DBMC International Conference on Durability of Building Materials and Components*, Istanbul - Turkey May, 2008.
 - 30- Eldieb, Biddah, Aldajah and Hammami, “Long-term performance of RC members externally strengthened by FRP exposed to different environments”, *The eleventh Arab Structural Engineering Conference*, Dhahran, Saudi Arabia, October 2009
 - 31- Saud Aldajah, Ashraf Biddah and Ammar Al Omari, “Use of FRP Composites to Strengthen Concrete Structures”, *2009 Joint ASCE-ASME-SES Conference on Mechanics and Materials – June 2009*.
 32. A. Biddah, K. El Sawy, S. Rani and T. Shaikhoon, “Strengthening of pultruded glass FRP section combined with concrete slab using CFRP plates”, *The 13th international conference on structural and geotechnical engineering*, Cairo, Egypt, December 2009.
 33. A. Biddah and A. Ghobarah, “Innovative technique in strengthening of reinforced concrete columns”, *First middle east conference on Smart monitoring, assessment and rehabilitation of civil structures*, February 2011, Dubai, UAE.
 34. A. Ghbarah and A. Biddah, :Rehabilitation nad strengthening of structures for lateral loads, *First middle east conference on Smart monitoring, assessment and rehabilitation of civil structures*, February 2011, Dubai, UAE.

National Refereed Conference Papers

- 1- Ghobarah, A., Aziz, T.S. and Biddah, A., "Evaluation of the Seismic Response of Existing Reinforced Concrete Structures", *Second Cairo Earthquake Engineering Symposium on Seismic Design Codes*, Cairo, Egypt, pp. 67-77, December 1995
- 2- Biddah, A., Ghobarah, A. and Aziz, T.S., "Assessment of the Capacity of existing Beam-Column Connections", *Seventh Canadian Conference on Earthquake Engineering*, Montreal, Canada, pp. 421-428, June 1995
- 3- A. Ghobarah, H. Abou-Elfath and A. Biddah, "Damage assessment for non-ductile reinforced concrete frames", *Eleventh European Conference on Earthquake Engineering*, Paris, France, Sept. 1998

- 4- Biddah, A. and Ghobarah, A., "Inelastic shear deformation modelling in existing and retrofitted concrete frames", *Sixth U.S. National Conference on Earthquake Engineering on Seismic Design and Mitigation for the Third Millennium*, Seattle, Washington, USA, May 1998
- 5- S. A. El-Behairy, S. H. Ahmed and A. Biddah, "Behaviour of reinforced concrete beams subjected to torsion strengthened by FRP", *the third middle east symposium on structural composites for infrastructure applications*, Dec. 2002, Aswan, Egypt, CD Ref. No. Shear3
- 6- A. Biddah, "Shear strengthening of reinforced concrete beams using externally bonded polycarbonate sheets", *the third middle east symposium on structural composites for infrastructure applications*, Dec. 2002, Aswan, Egypt, CD Ref. No. Shear8
- 7- A. Biddah, "Using FRP members in composite action with reinforced concrete slabs to withstand the harsh environment in the Arabian Gulf region", *The fourth Annual UAE University Research Conference*, April 2003, Al Ain, UAE
- 8- A. Biddah and A. Ghobarah, "Rehabilitation of concrete bridges using fiber reinforced plates," second Gulf conference on roads, Abu Dhabi, UAE, Cd Ref. SGRCD32, March 2004
- 9- A. Biddah, "Punching shear strengthening of reinforced concrete slabs using FRP plates," the fifth annual UAE research conference, Al Ain, UAE, April 2004
- 10- A. Biddah and A. Nazmy, "Factors Affecting the Deterioration of R.C. Structures in UAE," 6th annual UAE research conference, Al Ain, UAE, April 2005
- 11- A. Biddah, "Anchorage Rehabilitation of beam reinforcement in beam-column connections," 6th annual UAE research conference, Al Ain, UAE, April 2005
- 12- A. Biddah, "CFRP strengthening of a residential building after removing an existing column," the fourth middle east symposium on composite for infrastructure application, Alexandria, Egypt, May 2005
- 13- A. Biddah and A. Nazmy, "Environmental and mix design effects on reinforced concrete performance in UAE," 7th annual UAE research conference, Al Ain, UAE, April 2006
- 14- A. Biddah, "Strengthening of opening moments joints in reinforced concrete frames using CFRP," 7th annual UAE research conference, Al Ain, UAE, April 2006
- 15- A. Biddah, K. El Sawy and S. Rani, "Experimental Investigation of Hybrid Glass/Carbon FRP Section Combined with Concrete Slab," 8th annual UAE research conference, Al Ain, UAE, April 2007
- 16- Saud Aldajah, Ashraf Biddah, Ammar Al-Omari and Adel Hammami, " Experimental Study of the Flexural Behavior of Carbon Fiber Reinforced Polymers Strengthened Concrete Structures ", 8th annual UAE research conference, Al Ain, UAE, April 2007
- 17- A. Biddah and A. Nazmy, "Experimental Studies on Corrosion Admixture Inhibitors in Reinforced Concrete," 8th annual UAE research conference, Al Ain, UAE, April 2007
- 18- A. Biddah and A. Nazmy "The effect of different local exposures on the performance of several concrete design mixes in UAE," 8th annual UAE research conference, Al Ain, UAE, April 2007
- 19- Saud Aldajah, Ashraf Biddah and Ammar Al-Omari, "Flexural Behaviour of CFRP Strengthened Concrete Structures", ninth Annual Research Conference, Al Ain, UAE, April 2008.
- 20- Biddah, A., "Strengthening of Reinforced Concrete Corner Joints with Opening Moments Using CFRP", 5th middle east symposium on Structural Composites for Infrastructure Applications, Hurgada, Egypt, May 2008.
- 21- A. Biddah, K. El Sawy, and S. Rani, "Experimental Investigation of Hybrid Glass/Carbon FRP Section Combined With Concrete Slab", Seventh International Conference On Composite Science And Technology - Sharjah, UAE, January 2009
- 22- A. Biddah, "Effect of CFRP strengthening on deflection of RC Slabs", 10th annual UAE research conference, Al Ain, UAE, April 2009.
- 23- S. Aldajah, A.. Eldieb, and A. Biddah, "Impact of Aggressive Environmental Exposure on the Behaviour of FRP Strengthened RC Members", 10th annual UAE research conference, Al Ain, UAE, April 2009.
- 24- S. Aldajah, A.. Eldieb, and A. Biddah, "Impact of aggressive environmental exposure on the behaviour of CFRP composites", 10th annual UAE research conference, Al Ain, UAE, April 2009.

Edited books

- 1- Aly Nazmy, Ashraf Biddah and Khaled El-Sawy "Emerging Technology in Structural Engineering," as a co-editor of the Proceedings of the 9th Arab Structural Engineering

Conference, Vol. 1 and 2, Abu Dhabi, UAE, 1434p, Nov. 2003

Scientific Report

- 1- Ashraf Biddah and S. A. Sheikh, Research report on the Behaviour of Concrete Box Culverts and Their Strengthening by Fibre Reinforced Plastics, *Ministry Of Transportation Of Ontario*, Toronto, Canada, January 1998

Appendix B: LIST OF CONSULTATIONS

- Structural assessment of 73 buildings in Abu Dhabi City for the Social Care and Minors Affairs Foundation including non-destructive testing, full structural review and provide a full study for the required remedial work. service Life study analysis to estimate the service life of the buildings. Submit the study to ADM and get approval to the client, 2011.
- Assessment of several existing villas and buildings by direct order from Abu Dhabi Municipality, 2010-2011.
- Structural study and rehabilitation design for the permit building of Abu Dhabi Municipality to design the required strengthening of columns to add new floor to the existing building, 2009.
- Three projects for the Ministry of presidential affairs: Assessment and rehabilitation design for (a) modifications at the Sea palace in Abu Dhabi. (b) Cornaish (Beach) palace in Abu Dhabi. (c) Structural modifications at the presidential palace in Abu Dhabi, 2009-2011.
- Two projects for the State – Security sector in Abu Dhabi: Assessment and testing for the main building at Al Khaliq Al Arabi and full maintenance assessment for previous leakage and corrosion in the ground beams and columns, 2009.
- Structural assessment of existing prestressed bridge at Al Ain due to truck collision and damage to the main girders. Full rehabilitation report and supervision of the work then finally load test on the bridge, 2009.
- Structural study and assessment of Twin towers at airport road in Abu Dhabi to add three additional floors, 2007.
- Structural study and assessment for newly constructed 6 story building for Al Dar properties to add three floors, 2008.
- Assessment of pre-cast beams due to shortage of main steel at the Formula One at Abu Dhabi, 2009.
- Structural assessment and inspection including testing for three buildings for Etisalat at Dubai. Provide the required remedial work drawings and BOQ, 2008-2010.
- Assessment of the main public library in Dubai due to modifications during the construction
- Full refurbishment structural assessment for existing 6 story building at Bur Dubai for Al Rostomani, 2010.
- Full refurbishment structural assessment for existing 2 story old building (more than 50 years old) at Diera to extend the service life for more than 20 years, 2009
- Full Structural rehabilitation study for some piers at Dubai Metro for RTA, 2009.
- Seismic design of the pipe hangers of ENVAC waste collection system at Movenpick Palm Jumeirah, Dubai, 2008
- Assessment of the foundation design of Sheikha Salama Mosque, Al Ain, 2008
- Strengthening of different slabs and new openings at Burj Dubai, 2008
- Strengthening of different slabs and the aquarium columns at Emirates Mall, Dubai, 2008
- Repair design of Fujairah bridge piers due to the deterioration at the splash area, 2008
- Assessment of the Apron concrete quality after construction of Al Yassat Airport at Al Yassat Island, 2007
- Strengthening design of Baniyas Tower for ALDAR Properties, Abu Dhabi, 2007
- Structural Assessment of the skeleton of Movenpick Diera and design the required repair work, Dubai, 2007-2008
- Fire assessment and methods of remedial works of Al Attar Tower, Sheikh Zaid road, Dubai, 2007
- Strengthening of the slabs of Holiday Inn- Sharjah, 2007
- Upgrading the parking ramps of the multi-story garage of the Water and Electricity head quarter in Abu Dhabi, 2007
- Testing and structural assessment of the Etisalat buildings, Dubai, 2006
- Inspection, structural assessment and proposing the required structural strengthening and/or repairs (if any) for a commercial building in Abu Dhabi, 2006
- Structural assessment and inspection of license building at Al Ain, Ministry of Interiors-Abu Dhabi Police GHQ, 2006

- Design and shop drawings for “Strengthening of Al Sufouh mixed use development, Dubai, 2006
- Analyzing, strengthening design of existing concrete slabs due to shrinkage cracks of the Emirates headquarter building, Al Garhoud, Dubai, 2006
- Analyzing, strengthening design of existing concrete slabs beams and columns at different locations in the University hostels and campus – Al Ain, 2006
- Structural CFRP strengthening of existing concrete slabs of Jumeirah Beach Residence, Dubai, 2006
- Analyzing, strengthening design of existing columns of B + G + 39 Storey Commercial/Residential Building on Plot – E2- Jumeirah Lake Towers, Dubai, 2005
- Analyzing, strengthening design of existing concrete slab to carry new MRI and Gamma Camera Machines in the new Al Nour Hospital – Abu Dhabi, 2005
- Analyzing, strengthening design of existing concrete slabs, beams and columns at Beach Palace – Abu Dhabi, 2005
- Third party for Structural stability check of Beach residential tower in Doha - Qatar – H.E. Ahmed Juma Al Zaabi Tower” and solve the problem of the ground water tank, 2005
- Structural CFRP strengthening of existing concrete walls to allow the Main contractor to open an opening in the wall at Al Jazeera Hospital – Abu Dhabi, 2005
- Structural CFRP strengthening of existing columns and foundations to carry extra load at existing Mosque – Jumeirah, Dubai, 2005
- Structural CFRP strengthening and repair of “Al Ain Bridge (at Truck road between Cement Factory R/A and Mezyad R/A) subjected to collision damage, Al Ain”, 2005.
- Testing and evaluating the behaviour of “Al Ain Bridge (at Truck road between Cement Factory R/A and Mezyad R/A) subjected to collision damage, Al Ain”, 2005.
- Structural and strengthening design of Addition of two floors on top of Abu Dhabi Municipality building, Abu Dhabi, UAE, Abu Dhabi, 2005.
- Structural strengthening design and testing of existing beams to eliminate two columns in private office at the sea palace, Abu Dhabi, 2004.
- Structural strengthening design of existing flat panel slabs for changing load conditions in the Financial Gate Way, Dubai, 2004.
- Design a practical solution for the structural damage that happened in Mafrag bridge for Public Works Department Abu Dhabi, 2004.
- Structural strengthening design of existing beams in the cafeteria of the American University – Sharjah using carbon fiber strips for Concrete repairs & cont. Co. W.L.L., 2004.
- Consultation service for Architectural Engineering Consultants, AEC, in analyzing and testing cladding sample for “The Ministry of Foreign Affairs Building, Abu Dhabi, UAE” and determining the location, dimensions and internal reinforcement of existing structural elements in “The Ministry of Interior Building, Abu Dhabi, UAE”, 2003.
- Re-design and change in the structural design system of existing Villa in Abu Dhabi to eliminate existing column in the basement. A strengthening system using Carbon fiber is designed for that purpose. Full load testing was conducted to evaluate the new system, 2003.
- Analyzing and testing of concrete samples for maintenance and upgrade structural concrete repairs at traffic police complex, Al Ain, 2003.
- Designed and prepared all technical specifications, as a *Structural Engineering Consultant*, of renovation of Sheraton Hotel in Abu Dhabi, UAE using Carbon fiber, 2003.
- Designed and prepared all technical specifications, as a *Structural Engineering Consultant*, of extension in the American Hospital in Dubai, UAE using Carbon fiber, 2003.
- Head of the receiving and technical inspection committee at the University level since January 2002.
- Designed and prepared all tender documents (general and technical specifications and bill of quantities), and supervised, as a *Structural Engineering Consultant*, the strengthened of On Pharma factory at Obour city, Egypt, using Carbodur, 2000.
- Designed and prepared all tender documents (general and technical specifications and bill of quantities), as *Part time Engineer*, the repair and strengthening of the columns and piers of Al Moasasa bridge, Cairo, for Prof. S. El-Behairy consulting office, 2000.
- Participated, as a member of the Egyptian code preparation committee, in preparing the specifications and code provisions in the field of earthquake resistance and Reinforced concrete structural design and construction, 1998-2001.

- Designed and prepared all tender documents (general and technical specifications and bill of quantities), as a *Part time Engineer*, the repair of surface and deep cracks of Port Said Harbour, Port Said, for Prof. Abdul Fatah El-Fiky consulting office, 2001.
- Participated, as a *Principal Member of the McMaster University Technical Group*, in expansion Anchors qualification testing and seismic analysis of the Korean Nuclear Reactor, Atomic Energy of Canada Limited, AECL, Canada, 1995-1997.
- Designed and prepared all tender documents (general and technical specifications and bill of quantities), and supervised, as a *Structural Engineering Consultant*, Multi pharma factory in Badr city, Egypt, 2000.
- Designed and prepared all tender documents (general and technical specifications and bill of quantities), and supervised, as a *Structural Engineering Consultant*, the Rehabilitation of Revolution of DAR EL-KOTOB AL MASRIA, Ministry of culture, Cairo, Egypt, 2000.
- Designed and prepared all tender documents (general and technical specifications and bill of quantities), and supervised, as a *Structural Engineering Consultant*, repair and strengthening of 15th of October training center, Ministry of housing, Egypt, 1999. This work done for the Reinforced concrete Research Unit, Ain Shams University.
- Designed and prepared all tender documents (general and technical specifications and bill of quantities), as a *Structural Engineering Consultant*, Suez Hospital on area of 11,000 m² for Mediquep contractors, Suez, Egypt, 1999.
- Participated in the designed and prepared all tender documents (general and technical specifications and bill of quantities), as a *Structural Engineering Consultant*, swimming pools of the Judiciary club, Alexandria, Egypt, 2000.
- Designed and prepared all tender documents (general and technical specifications and bill of quantities), and supervised, as a *Structural Engineering Consultant*, the Rehabilitation of Revolution Leadership Council Building, Ministry of culture, Gizera, Cairo, Egypt, 1998.
- Designed and prepared all tender documents (general and technical specifications and bill of quantities), as a *Structural Engineering Consultant*, two commercial residential towers (basement + 14 storeys) Ismailia, Menia Hotel (11 storeys), Menia, Egypt, 1998.
- Designed and prepared all tender documents (general and technical specifications and bill of quantities), and supervised, as a *Structural Engineering Consultant*, Link Mall, Maadi, Cairo, Egypt, 2000.
- Participated as a *Structural Engineering Consultant*, in strengthening of Burlington Bridge using composites, Hamilton, Ministry of Transportation, Canada, 1998.
- Participated as a *Structural Engineering Consultant*, in the design of multi-story garage of Censorship Administrative (El-Reqaba El-Edaria), designed to be 13 stories, Nasr city, Cairo, Egypt, 1992.
- Participated as a *Structural Engineering Consultant*, in strengthening of Box culvert using Glass fibre to carry extra loads, Burlington, Ministry of Transportation, Canada, 1998.
- Participated, as a *Structural Engineering Consultant*, in the analysis and design of five residential towers in El Madina, Saudi Arabia, (all tender documents including technical specifications and bill of quantities are submitted), 1991.
- Participated, as a *Structural Engineering Consultant*, in the analysis and seismic design of large transformers for the Philippine Power Plant, Acres International Limited, Niagara Falls, Canada, 1997.
- Participated, as a *Structural Engineering Consultant*, in the analysis and seismic design of dome ceiling of the cathedral and the staircases, Kerry T. Howe Engineering limited, St. Catharines, Canada, 1997.
- Participated, as a *Principal Member of the McMaster University Technical Group*, in the analysis and seismic design of water tanks on top of the tallest building in Singapore, McMaster University, Canada, 1996.
- Field proof testing on newly constructed bridges at the ring road of Cairo as well as several bridges in Alexandria, 1998-2001.
- Supervised some construction projects in Egypt as a part-time *Structural Engineer*, January 1989 – Sept. 1993, and July 1998 – August 2001.
- Designed several projects as a *part-time structural engineer* in the Consulting Office of Prof. M.I. Soliman, Prof. S. El-Behairy, Cairo, Egypt, July 1989 - June 1993.
- Designed several projects as a *part-time structural engineer* in the Consulting Office of Prof. A. El-Korashy, Prof. A. Abou-Elenain, Cairo, Egypt, July 1998 - June 2000.