

# CURRICULUM VITAE

**Name:** William Wilson  
**Institution:** The University of the West Indies, St. Augustine  
**Department:** Department of Civil & Environmental Engineering  
**Faculty:** Engineering  
**Post:** Lecturer

**AREA OF ACADEMIC SPECIALISATION:** STRUCTURAL ENGINEERING

## **QUALIFICATIONS:**

<u>Degree</u>	<u>University</u>	<u>Date</u>
PhD	Imperial College University of London,	Dec, 1987
MSc	Imperial College University of London	Dec, 1984
DIC	Imperial College	Dec, 1984
B.Eng	University of Guyana	Nov, 1981

## **TRAINING:**

<b>CPD</b>	Earthworks and Embankments	Imperial College	2002
	Foundations	Imperial College	2001

## **PUBLICATIONS**

Iwaro, Joseph; Abrahams Mwasha; Rupert G. Williams; **William Wilson**. *An Integrated Approach for Sustainable Design and Assessment of Residential Building Envelope: Part 1*. International Journal of Low-Carbon Technologies; (2014), pp 1–7.

**DOI:10.1093/ijlct/ctu002**

(Journal Impact Factor = 0.306, Citations=0 )

Iwaro, Joseph; Abrahams Mwasha; Rupert G. Williams; **William Wilson**. *An Integrated Approach for Sustainable Design and Assessment of Residential Building Envelope: Part II*. International Journal of Low-Carbon Technologies (2014), pp 1-20,

**DOI:10.1093/ijlct/ctu021**

(Journal Impact Factor =0.306 , Citations=0 )

Iwaro, Joseph; Abrahams Mwasha; Rupert G. Williams; **William Wilson**. *The Role of Integrated Performance Model In Sustainable Envelope Design And Assessment*. International Journal of Sustainable Engineering (2014), pp. 1-24,

**DOI:10.1080/19397038.2014.930211**

(Journal Impact Factor = 0.591 , Citations=0 )

**Wilson, William A.**, Rupert G. Williams, Deilia Gaston (2014). *Capacity of Shear Walls with Caribbean Timbers Species*. The West Indian Journal of Engineering, Vol. 37, No. 1, July 2014, (In Press).

(Journal Impact Factor = Not Available, Citations=0 )

**Wilson, W.**, R. Williams. (2013). *Research on synchronization and Hurricane Forces on Structures in the Caribbean*. The Wind Engineer, Special Issue: Caribbean Wind Research and Topics, American Association of Wind Engineering. April 2013.

Mwasha, A., A. Armstrong-Richardson and **W. Wilson** (2013). *Management of Polystyrene Wastes using a Supercritical Solvent – Propane*. Journal of The Association of Professional Engineers of Trinidad and Tobago, Vol. 41, No. 1 , April/May, 2013, pp.23-28

(Journal Impact Factor = Not available, Citations=0 )

### **WORK NOT YET PUBLISHED**

#### **Currently under review for publication**

Williams Rupert G., **Wilson, William A.** and Dookeeram, Reisa. *Numerical Response of SDOF System under Blast Loading*. The West Indian Journal of Engineering.

#### **In preparation**

**Wilson, William A.**, Rupert G. Williams, Vinisha Ramsingh and Surchee A. Babwah. *Cyclic Capacity of Shear Walls with Caribbean Timber Species*.

**Wilson, William A.**, Sudarsan Sukha, Ian Khan-Kernahan, R. G. Williams. *Behaviour of Stress-Laminated Timber Bridges with Caribbean Species - Experiment Investigation*.

**Wilson, William A.** *Structural Mechanics* - Textbook on mechanics of structural elements based on classical theory for undergraduate students comprising 10 chapters.

### **SCHOLARSHIPS AND AWARDS:**

Commonwealth Scholarship Imperial College	1983 - 1986
Inter-American Development Bank Fellowships Imperial College	1989
President's Medal – Best Graduating Student, University of Guyana	1981

### **PAPERS PRESENTED:**

#### **Papers Presented At Academic Conferences and Seminars**

### **SPECIAL PRESENTATION AND INVITED LECTURES**

#### **Reports**

Walcott, A, **Wilson, W.A.**, Walcott, G. and Williams, M. (2002). Commercial Potential of Lesser-Used Guyanese Wood Species, Tropenbos-Guyana Report 2002-1.

Louman, B. and **Wilson, W.A.** (2002). Review of Tropenbos-Guyana Programme, Tropenbos-Guyana Report-2, The Netherlands.

### **Papers Presented At Workshops and Training Sessions**

**Wilson, W.A** and Amorfa, J. (1992). Utilisation of Guyanese Timber in Construction, Conference on the Guianas, University of Guyana.

**Wilson, W.A.** (2004). The Need for Higher Awareness of Standards In The Education Sector, Guyana National Bureau of Standards Seminar on Building Codes, Georgetown.

**Wilson, W. A.** (2008). Racking Behaviour of Wood Shear Walls: Implications for hurricane-resistant design of timber buildings in the Caribbean, Departmental Seminar, Department of Civil & Environmental Engineering, The University of the West Indies.

Veacock, M. and **Wilson, W.A.** (2006). Enhancing Potential of Drainage and Irrigation on Guyana's Coastland, Earth Day Conference 2006, University of Guyana

### **PUBLIC SERVICE**

Chairman, National Council for Technical and Vocational Education  
(**TVET**), Guyana (2007 – 2013)

Chairman, Board of Directors Guyana Water Incorporated 2002 – 2007

Chairman of Board Georgetown Sewerage & Water Commissioners  
1998 – 2002

Deputy Chairman of Board Georgetown Sewerage & Water  
Commissioners 1994 – 1998

Board Director, Guyana Forestry Commission 2000 – 2001

Chairman, Board of Directors Social Impact Amelioration Programme  
1989 - 1994

### **OTHER PROFESSIONAL ACTIVITY AND EXPERIENCE**

#### **(i) Membership of Professional Association**

Member, American Society of Civil Engineers (**M.ASCE**)

Fellow, Guyana Association of Professional Engineers (**F.GAPE**)

#### **(ii) Chairman of MPhil/PhD Upgrade Assessment Committee – Joseph Iwaro “Development of an Integrated Performance Model for the Assessment and Design of Sustainable Residential Building Envelope in Trinidad and Tobago, UWI, August 2012**

#### **(iii) Journal Review:**

- a) West Indian Journal of Engineering (WIJE) – Several papers 2011 – 2015
- b) Journal of The Association of Professional Engineers of Trinidad and Tobago
- c) International Journal of Environment and Waste Management (IJEWM)

#### **(i) Caribbean Examinations Council (CXC)**

Examinations Moderator – CAPE Geometrical and Mechanical Engineering Drawing  
(GMED) (2002 – present)

**(ii) University of Greenwich, UK**

External Graduate Advisor - MSc. Student Beverly Johnson "Regularisation of Squatter Settlements in Guyana" 2002 -2004)

**RESEARCH**

- (i) Improved Hurricane-Resistant of Timber Buildings in the Caribbean – TT\$ 70,000 Campus Research and Publication Fund Committee (July 2012 – Dec 2013)
  
- (ii) Theoretical and Experimental Investigation of Stress-Laminated Timber Bridges using Caribbean timber species – Department of Civil & Environmental Engineering, UWI (\$200,000) (July 2013 – Dec 2015)

**POSTGRADUATE RESEARCH AND SUPERVISION**

- (i) MSc in Construction Management (1student) Traffic Management Plan for Phase II of the Bridge Rehabilitation Project in Guyana, 2009
- (ii) MSc in Civil Engineering (4 No. students)
  - The Sustainable Design Of Reinforced Concrete For Low Rise Buildings In The Caribbean
  - Influence of Testing Method on Timber Shear Walls Capacity
  - Structural Evaluation Of Existing Transmission Towers In Trinidad Based On Current Design Codes
  - Investigation of Stress-Laminated Timber Bridges using Caribbean timber species, 2015

**TEACHING AND RELATED EXPERIENCE**

	<u>Post</u>	<u>Institution</u>	<u>Dates</u>
<b>(a) Academic</b>	Lecturer	University of the West Indies	2010 – present
	Temp. Senior Lecturer	University of the West Indies	2007 – 2010
	Senior Lecturer	University of Guyana	1992 - 2010
	Lecturer II	University of Guyana	1988 – 1992
	Lecturer I	University of Guyana	1983 – 1988
	Assistant Lecturer	University of Guyana	1981 – 1983
<b>(b) Administrative</b>	Dean, Faculty of Technology	University of Guyana	2002 – 2007
	Head, Department of Civil Engineering	University of Guyana	1989 – 2002

**Current Teaching and Examiner Duties:**

Engineering Graphics – manual and AutoCAD drawing.

Structural Mechanics – Determinate and indeterminate structures

Structural Design I - Timber Design module - 1<sup>st</sup> Examiner

Structural Engineering – Matrix Structural Analysis module  
Environmental Engineering Systems - Design of reinforced concrete water retaining structures module  
Design Project - supervision of projects groups and individuals (1 group of 4 students/year)  
Special Investigative Project – supervision of students (average 4No. per year)  
Foundation Engineering - 2nd Examiner  
Soil Mechanics – 2<sup>nd</sup> Examiner  
Environmental Geotechnics - 2nd Examiner

**OTHER  
PROFESSIONAL  
EXPERIENCE**

**Consultant Engineer**

**2000 – Present**

Senior Consultant (David Klautky & Associates) 1988 – 2000

**Major Projects:**

**(a) Structures / Foundations:**

- 2014 **Brandsford Office Complex** – multi-storey (6 floors) reinforced office building. Georgetown, Guyana.
- 2007 **Cacique Apartments, Banqueting & Catering Establishment (US\$4M)**  
Structural and foundation designs for Apartment and Banqueting Complex comprising several multi-storey reinforced concrete buildings (2 NO. 5-storey and 3 No. 2-storey buildings); Facility includes several lifts and an elevated swimming pool.
- 2005 **Brandsville Apartments Extension Project** (Brands Group / Car Care; **US\$0.2M**)  
Structural and foundation design of multi-storey apartment building at Pike Street, Campbellville, Georgetown.
- 2004 **Poonai Office Building** (ARC Architects/NABI, **US\$0.2M**)  
Structural and foundation design of multi-storey reinforced concrete office building at Charlotte, Georgetown
- 2004 **Office Building Guyana Privatisation Unit: Guyana Sugar Corporation:**  
Structural Integrity Assessment of unfinished multi-storey skeletal frame of Steel Structure building, Camp St. Georgetown.
- 2003 **Aircraft Hangar** (Lex Barker/ Rawle Jordan Associates)  
Structural Design of steel portal frame hangar structure with reinforced concrete shallow foundation
- 2003 **Shopping Mall Complex** (Rawle Jordan Associates)  
Structural designs of steel structure including timber pile foundation with reinforced

concrete pile caps.

- 2002 **Woodlands Hospital Extension Project** (ARC Architects/NABI, **US\$0.3**)  
Structural design of foundations and superstructure of 2-storey hospital wing and enclosed elevated walkway
- 2000 **University of Guyana Forestry Building** (Guyana Forestry Commission, **US\$0.8**)  
Structural designs and supervision of 2-storey building to house classrooms and offices at Faculty of Agriculture, University of Guyana, Turkeyen campus
- 2000 **Car Care Building, Hadfield Street:**  
Structural Integrity Assessment of review for 4-storey reinforced concrete building.
- 1999 **Quarry Modernisation Project and Barge Load-out Facility- Mazaruni Granite Products Limited: (US\$8.2M)**  
Design of Steel Sheet Pile Bulkhead, and Crushing Plant Foundations, Steel structure for Generator Building and Control Tower, and Site Development works, Mazaruni, Essequibo.
- 1998-2001 **Improved Guyana/Suriname Ferry Project** (Government of Guyana/Inter-American Development Bank: **US\$20.65M**)  
Supervision of Marine and Onshore Civil Works., Ferry terminals at Moleson Creek, (Guyana side) and South Drain (Suriname side), mooring, docking and loading facilities, retaining structures, buildings, utilities, etc.
- 1998 **University of Guyana Student Dormitory** (University Consultancy Organisation, **US\$0.05**)  
Foundation and Structural Designs of two-storey reinforced and timber Building, Turkeyen Campus, Georgetown.
- 1998 **Cara Lodge Hotel Extension** (Heritage Incorporated)  
Foundation and structural designs for steel multi-storey structural frame buildings for new hotel wing, Cummingsburg, Georgetown
- 1998 **Guyana Forestry Commission: Head Office Rehabilitation and Extension (US\$0.8)**  
Structural Design and Contract supervision of 2-storey wooden Head Office and reinforced concrete herbarium / library building
- 1998-1999 **National Bank of Industry & Commerce: Head Office & Corporate Banking Complex**, New Market & Waterloo Streets, South Cummingsburg, Georgetown **US\$1.8M**).  
Structural Design and Construction supervision services for four-storey reinforced concrete building project. reinforced concrete superstructure Design of piled foundation and reinforced concrete superstructure. External works including sewerage (including reservoir, pump station, etc) drainage systems, driveways, external paving, generator building, etc
- 1997-2000 **Skeldon Line Path Secondary School - Guyana Education Access Project (DfID / CfBT US\$1,2M)** Design and Construction Supervision services:  
Foundations and Structural Design and construction supervision of a new reinforced concrete two-storey classroom block building and rehabilitation and extensions to existing timber classroom blocks and concrete laboratory and workshop buildings of Secondary School in Region 6, Courantyne.

- 1997-2000 **Skeldon High School - Guyana Education Access Project (DfID/CfBT US\$.8M)** Design and Construction Supervision services:  
Foundations and Structural Design and construction supervision of a new reinforced concrete two-storey classroom block building and rehabilitation and extensions to existing concrete classroom, laboratory, workshop and canteen buildings of Secondary School in Region 6, Courantyne.
- 1997-2000 **Tagore Memorial Secondary School - Guyana Education Access Project (DfID/CfBT US\$.3M)** Design and Construction Supervision services:  
Foundations and Structural Design and construction supervision of a new reinforced concrete two-storey classroom block, laboratory and workshop buildings of Secondary School in Region 6, Courantyne.
- 1997-2000 **Linden Foundation Secondary School - Guyana Education Access Project (DfID/CfBT US\$.2M)** Design and Construction Supervision services:  
Foundations and Structural Design and construction supervision of a several reinforced concrete two-storey buildings (8 No.) for classrooms library, computer block and several single storey reinforced concrete buildings for workshop, laboratory and auditorium. Design of site works including drainage, water supply, sewerage, etc.
- 1997-2000 **New Silver City Secondary School - Guyana Education Access Project (DfID/CfBT US\$.1.5M)** Design and Construction Supervision services:  
Foundations and Structural Design and construction supervision of a several reinforced concrete two-storey buildings (3 No.) for classrooms library, computer block and a single storey reinforced concrete building for auditorium. Design of site works including drainage, water supply, sewerage, etc.
- 1997-2000 **Christianburg Multilateral School - Guyana Education Access Project (DfID/CfBT US\$.5M)** Design and Construction Supervision services:  
rehabilitation works for reinforced concrete two-storey building (3 No.) for classrooms, library and computer centre. .
- 1997-2000 **WisRock Secondary School - Guyana Education Access Project (DfID/CfBT US\$.2M)** Design and Construction Supervision services:  
Foundations and Structural Design and construction supervision of a several reinforced concrete two-storey building for classrooms library, computer block and several single storey reinforced concrete buildings for workshop, laboratory and auditorium. Design of site works including drainage, water supply, sewerage, etc.
- 1997 **Rehabilitation Ogle/Industry Community Centre Building:** (IBD/GOG; Social Impact Amelioration Programme **US\$0.03M**)  
Structural designs of two-storey reinforced concrete and timber building and viewing pavilion
- 1997-1998 **Guyana National Cooperative Bank: Office and Banking Facilities:**  
Three (3 No.) Two-storey reinforced concrete buildings for proposed Branch offices at Vreed-en-Hoop, Anna Regina, New Amsterdam  
Structural Design: Piled Foundation, RC frames using flat slab structural forms.
- 1997 **Primary Education Improvement Programme (IBD/GOG, US\$0.12)**  
Structural Audit and Condition Assessment Surveys of 28 Primary Schools;  
Reinforced concrete and timber structures

- 1995-1996 **Air Services Limited: Aircraft Hanger and Offices.** A. Mazaharally & Sons: **US\$0.35M**).  
Reinforced concrete and timber structure. Foundation and Structural Designs of superstructure including 96 ft. (29m) span timber trusses at Ogle aerodrome.
- 1995 **Georgetown Sewerage and Water Commissioners: Office Building at Shelter Belt. (US\$0.06)**  
Structural and foundation design of two-storey reinforced concrete building.
- 1994-1997 **Improved Guyana/Suriname Ferry Project:** (Government of Guyana / European Commission: **Euro \$20.65M**) in association with Portconsult of Denmark and Sunecon of Suriname:  
Contract Supervision Services, for construction of ferry terminals, steel marine structures including mooring and loading facilities, retaining structures, onshore facilities for offices, staff accommodation for customs and immigration, water supply, sewerage, drainage, external brick paving, etc. on both Guyana and Suriname banks of the Corentyne river.
- 1994 **Guyana Electricity Corporation: Review of Piled Foundation Design for 11 MW Wartsila Diesel Power Plant. (US\$11M)** for Garden of Eden:
- 1994 - 1995 **Demerara Mutual Life Assurance Co. Ltd: Commercial 3-Storey Concrete Building US\$1.7M).**  
Piled foundation design; Construction Supervision of at Robb Street, Georgetown.
- 1994-1995 **Demerara Bank Ltd. Office Building and Banking Complex:** Supervision of structural works for reinforced concrete building at Camp Street.
- 1994 **Enterprise Market Building: (CDB/Government of Guyana, Basic Needs Trust Fund - Third Programme, US\$0.08)** Structural design of reinforced and timber market building; Construction supervision.
- 1994 **Artisanal Fisheries Infrastructure Project** Charity, Essequibo Coast (Government of Guyana/ CIDA: **US\$1.1M**)  
Design of Steel Sheet Pile Retaining structure and Relieving Platform; Settlement Investigation/Damage Assessment of Building
- 1992 **Central Housing and Planning Authority / Georgetown City Council:** Foundation Assessment for multi-storey buildings:  
Design Review and Assessment of shallow and deep (timber piles) foundations for several multi-storey structures (5-9 storeys).
- 1990-1994 **Rice Seed Plant** (Mahaica Mahaicony Abary / Agricultural Development Authority: **US\$0.1M**). Structural design and construction supervision of steel frame industrial building at Onverwagt

**(b) Roads and Infrastructure**

- 2005 **Rehabilitation of Triumph Roads** (SIMAP Agency, IDB/Government of Guyana; **US\$0.12**)  
Condition survey and pavement design of several roads in Triumph (Section B), East Coast Demerara using DBST pavement and timber revetment to roadside canal along a section of Market Road.



- 2004 **Rehabilitation of Relief Access Road and Bridge** (SIMAP Agency, IDB/Government of Guyana; **US\$0.04**)  
Design of road using DBST pavement and small reinforced concrete access bridge for small residential community.
- 2000 **Hydronie/Bushy Park Road Rehabilitation** (SIMAP Agency, IDB/Government of Guyana; **US\$0.18**)  
Design of rehabilitation works for road using DBST pavement and timber revetment along roadside drain to retain road embankment
- 1999 **Roads and Drainage Sub-Projects:** Leonora Housing Scheme Road, Anna Catherina Road, Coglan Dam Road, Unity Road, Little Diamond Road, Bee Hive Road. (CDB/GOG; Basic Needs Trust Fund (Third Programme) **US\$0.64M**)  
Design and Supervision of Rehabilitation Works including designs of DBST roads, drainage, bridges and culverts:
- 2000-2001 **Improved Guyana/Suriname Ferry Project** (Government of Guyana/Inter-American Development Bank: **US\$20.65M**)  
Designs Access roads, revetment, site paving works; Designs for 6 km Access Road from Crabwood Creek to Moleson Creek Terminal
- 1998 **Review of Greater Georgetown Planning Area Scheme.** (Central Housing & Planning Authority, **US\$0.07M**)  
Urban Infrastructure Systems Planning and Design – Transportation, Roads and Traffic, Water Supply, Sewerage, Drainage
- 1997-1998 **Eccles Industrial Estate Min of Trade & Tourism (US\$4.3M)**  
Construction Supervision of Infrastructure works, including Roads, drainage and utilities (IS)
- 1995-1996 **Eccles Industrial Estate** (Ministry of Trade, Tourism and Industry: **US\$4.3M**):  
Physical Infrastructure Layout; Design of Roads, Drainage, Bridges, culverts, utilities
- 1997 **Georgetown Roads Rehabilitation – Phase II** (IBD/Government of Guyana; Georgetown Road Rehabilitation Programme Lot 12 (West Ruimveldt, La Penitence & Albouystown) (**US\$1.724M**) Condition Assessment and Pavement Design. Design of roads (Asphaltic concrete pavements)
- 1996 **Georgetown Roads Rehabilitation – Phase II Lot 5:** (Campbellville & Blygezight Gardens) (IBD/Government of Guyana; Georgetown Road Rehabilitation Programme (**US\$0.308M**)  
Condition Assessment and Pavement Design of roads (Asphaltic concrete pavements) and Structural design of several bridges.
- 1995-1996 **Region 4 Road Rehabilitation Programme:** Buxton, Lusignan, First Street Better Hope (IBD/Government of Guyana; Ministry of Public Works & Communication: (**US\$0.15M**)  
Condition Assessment and pavement Design and Supervision of several urban roads using DBST and Asphaltic pavements.
- 1995-1996 **Region 4 Road Rehabilitation Programme** (IBD/Government of Guyana; Ministry of Public Works & Communication). Condition Assessment, Design

- and Supervision of various urban roads using DBST and Asphaltic pavements:
- Lot 5 Roads:** Third Street Herstelling, Creek Dam Herstelling, Extension to Creek Dam Herstelling (**G\$6M**)
- Lot 5 Roads;** Princess Street - Water St to Mandela Av.(**US\$0.113M**).
- Lot 5 Roads;** Stone Av. Dehli St. Minor Streets in Blygezight (**US\$0.83M**)
- 1995-1996 **Rehabilitation of Windsor Forest and La Jalousie Roads.**(IDB/GOG: Social Impact Amelioration Programme **US\$0.25M**).  
Condition Assessment, Pavement Design and construction Supervision of various urban roads using DBST pavements.
- 1993-95 **Guyana Urban Rehabilitation Programme** (Government of Guyana/Inter-American Development Bank, **US\$1.25M**).  
Structural designs and preparation of contract documents for Infrastructure rehabilitation projects including Abattoirs (2 No.), Markets (5 No.), Town halls (4 No.), Municipal workshops (2 No.), etc., in the five towns (Georgetown, Linden, New Amsterdam and Corriverton).
- 1993 **Civil Aviation Department / Aircraft Owners Association: Ogle Aerodrome Development Plan**  
Physical Infrastructure Layout of aircraft hangars, taxiways, site drainage and other facilities. Design of concrete taxiways and aprons
- (c) **Damage Assessment:**
- 2006 **Damage Assessment of GNSC Wharf** (Guyana National Shipping Corporation (Lloyds Insurance Agency, **US\$0.03M**)  
Condition survey and structural damage assessment caused by impact of ship to timber wharf and mooring dolphins and bollards at Georgetown.
- 2003 **Damage Assessment of Demerara Harbour Bridge** (Guyana National Shipping Corporation (Lloyds Insurance Agency, **US\$0.03M**)  
Condition survey and structural damage assessment due impact of ship to steel floating bridge structure (raised section) including decking, trusses, piers and pontoons at East Bank Demerara.
- 2001 **Damage Assessment of LINMINE wharf and Loader Facility:** (Guyana National Shipping Corporation (Lloyds Insurance Agency, **US\$0.03M**)  
Condition survey and structural damage assessment due impact of ship to timber wharf and steel loader facilities at Linden, East Bank Demerara, Region 10
- 2000 **Damage Assessment of Guyana Fertilizers wharf** (Guyana National Shipping Corporation (Lloyds Insurance Agency, **US\$0.03M**)  
Condition survey and structural damage assessment due impact of ship to timber wharf and mooring dolphins at Georgetown
- 1999 **Damage Assessment of John Fernandes Wharf** (Guyana National Shipping Corporation (Lloyds Insurance Agency, **US\$0.03M**)  
Condition survey and structural damage assessment due impact of ship to timber wharf and mooring dolphins
- 1998 **Damage Assessment of Muneshwers' Wharf** (Guyana National Shipping Corporation (Lloyds Insurance Agency, **US\$0.05M**)  
Condition survey and structural damage assessment due impact of ship to timber

wharf and mooring dolphins at Georgetown  
1998 **Damage Assessment of Guyana Sugar Corporation Bulk Sugar Terminal, Ruimveldt** (Guyana National Shipping Corporation (Lloyds Insurance Agency, US\$0.1M)  
Condition survey and structural damage assessment due impact of ship to reinforced concrete wharf and steel gantry loading facilities East Bank Demerara.

**(d) Environmental Impact Assessment**

2003 **Environmental Impact Assessment - Lethem Industrial Estate** (Ministry of Trade & Tourism / TPAS)

EIA and EMP for Industrial Estate Lethem, Region 9, considering infrastructure facilities such as roads, drainage industrial pollution including noise, dust, chemicals

2002 **Environmental Impact Assessment - Eccles Industrial Estate** (Ministry of Trade & Tourism / TPAS)

EIA and EMP for proposed Industrial Estate AT Eccles, East Bank Demerara considering infrastructure facilities such as roads, drainage industrial pollution including noise, dust, chemicals and other impacts

**William A. Wilson** PhD, MSc, DIC, BEng, M.ASCE, FGAPE