

# International Accreditation in Civil & Environmental Engineering at the University of the West Indies

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**Abstract**—The Department of Civil and Environmental Engineering at the University of the West Indies, St. Augustine in Trinidad & Tobago has offered internationally accredited engineering education for over half a century. This brief historical note provides a glimpse of how it was achieved since the said Department's inception in 1961 and how it has been maintained. It is hoped that such an account may be useful to other institutions within the LACCEI for a comparative assessment and reflection.

**Keywords**-- Accreditation, Civil Engineering, West Indies

## I. INTRODUCTION

The University of the West Indies (UWI) is a regional institution belonging to the fifteen English-speaking Commonwealth Caribbean Islands and Belize (Fig. 1). The islands are Anguilla, Antigua, Bahamas, Barbados, British Virgin Island, Cayman Islands, Dominica, Grenada, Jamaica, Montserrat, St. Kitts and Nevis, St. Vincent, St. Lucia, Trinidad and Tobago, and Turks and Caicos. The UWI started in 1948 as a college of the University of London in Kingston, Jamaica. In 1962 it became the University of the West Indies (UWI), and the erstwhile Imperial College of Tropical Agriculture in Trinidad became its second campus. A few years on, a third campus was established in Barbados [1].

The Faculty of Engineering was a single campus faculty located in Trinidad; until the opening of the Mona School of Engineering in Jamaica in 2015. Nonetheless, this technical note pertains only to the Department of Civil Engineering at UWI's campus at St. Augustine in Trinidad.

The Department of Civil & Environmental Engineering, henceforth the Department, was established in 1961[2]. Since its inception, it has maintained close links with the universities in the United Kingdom. Indeed, its undergraduate programmes have paralleled those in the UK. This historical note outlines the evolution of accreditation in the Department - at first through the Institution of Civil Engineers (ICE) in the UK, and globally since 1989 through the Washington Accord [3]. It starts with the formation of the Joint Board of Moderators (JBM) in the UK.

The ICE, the Institution of Structural Engineers (IStructE) and the Institution of Municipal Engineers (IMunE) founded the (JBM) in 1977. Currently, it comprises ICE, IStructE, the Institute of Highway Engineers (IHE) and the Chartered Institute of Highways and Transportation (CIHT). JBM's mission is to evaluate Civil Engineering degree

programmes primarily at British Universities [3]. It reports to the Engineering Council in the UK (ECUK), which was established in the early 1981 for licensing professional engineers [5].



Fig. 1 West Indies

## II. PRE-JBM SITUATION

Against the foregoing background, and in the author's recollection, the first formal JBM's accreditation of the Department took place in 1994. Until then, i.e. since its inception [6], the Department's reputation and quality assurance were based on a triennial visit of external examiners and their annual review of examination questions and marked scripts. These assessments were submitted to the Council of Engineering Institutions (the predecessor to the Engineering Council) through the ICE. Thus, the UWI graduates in Civil Engineering were eligible for associate membership of the Institution of Civil, and the Institution of Structural Engineers, without writing any examination. In other words, the Department's graduates met the academic requirements for the corporate membership of the said institutions.

The aforementioned external examiners were Johann Ludwig Atrops (University of Cologne), Patrick Dowling (Imperial College, London), J. R. D. Francis (Imperial College), Paul Johnston (Trinity College Dublin), Duncan Mara (University of Liverpool), Professor Donald McDowell (University of Manchester), Kuldeep Viridi (City University, London), Peter Wolf (University College, London) and William Wright (Trinity College, Dublin). At the end of such visits, external examiners briefed the academic staff on their visits' findings and recommendations. These briefings were thoughtful and formative. More importantly, they kept the Department connected with the global academic mainstream.

### III. JBM VISITS

As stated earlier, the first accreditation visit by a JBM team took place in 1994, and the second in 1999. Both visits resulted in accreditation for a period of five years. The submissions for these two visits were prepared solely, confidentially and in a free format by the then heads of department. Moreover, at that time, only senior lecturers and professors interacted with the visiting team.

The UK-SPEC (the UK Standard for Professional Engineering Competence) was released in 2003. A year later, in November 2004, a JBM accreditation team led by James Croll (University College London) visited the Department. He was accompanied by Barry Clarke (University of Newcastle), and Ms. Ellen Ryan (ICE).

The 2004 visit resulted in accreditation of the Department's two undergraduate degrees for five years. In addition, it received an interim accreditation for its two new MSc programmes in Civil and Civil with Environmental Engineering; which were introduced as matching sections in response to the ECUK's Standards and Routes to Registration (SARTOR) formulated in 1997 [7]. The JBM team outlined at the conclusion of this visit, in a meeting with all academic staff, the strengths and weaknesses of the Department's academic programmes. Their two salient recommendations were: (a) greater emphasis on health and safety issues, and (b) integration of sustainability as a continuous learning thread in the curriculum.

In November 2011, the JBM visiting team comprised Clive Williams (University of Plymouth) and Ellen Ryan. The regional members were Anthony Farrell and David Blake. For the first time, a JBM prescribed template was used to prepare the main submission document.

The 2011 visit resulted in the BSc Civil Engineering, BSc Civil with Environmental Engineering, MSc Construction Management (for the first time since its inception in 1976), MSc Civil Engineering, and MSc Civil with Environmental Engineering programmes being awarded accreditation for the period 2009 to 2014. The JBM team met with all academic staff and outlined its findings. The two leading recommendations were: (a) greater emphasis on the finite element method in structural engineering courses, and (b) strengthening of links with the industry.

In May 2016, the Department submitted its application for accreditation of its programmes for the years 2015-2020. The JBM team comprised Nigel Smith, Clive Williams and Darren Byrne (IStructE). This time, the Department's submission was deficient in a number of areas and the request for re-accreditation was denied. In December 2016, the Department made a new submission with a request for re-accreditation. This new submission corrected the deficiencies outlined by the JBM. Accordingly, the JBM agreed to visit in November 2017 to review the Department's accreditation status. In February 2018, JBM re-accredited all

the Department's undergraduate and post-graduate programmes for the period 2015-2020. It is hoped that others will report on the efforts made for this visit, and its outcome when a sequel to this historical note may be written in the years to come.

### IV. CONCLUSIONS

In conclusion, notwithstanding the ebb and flow of accreditation events, their benefits have been salutary in many ways. These include curriculum restructuring, strengthening of internal quality assurance protocols, considerable improvement in the health and safety of the Department's working environment and last but not least international recognition.

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