Benchmarking selected BCA Diploma Programmes

UK NARIC Benchmarking Report – Executive Summary

Submitted to the BCA Academy by UK NARIC

The National Recognition Information Centre for the United Kingdom

The national agency responsible for providing information and expert opinion on qualifications and skills worldwide

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In August 2017 UK NARIC completed an independent evaluation and benchmarking analysis for the BCA Academy in Singapore[1]; to determine the comparable academic standing of the School of Building and Development's current listing of full-time diploma programmes in the education systems of Singapore, the UK and Australia. The BCA Diploma programmes that have been analysed are:

- Diploma in Architecture (Technology)
- Diploma in Construction Engineering
- Diploma in Construction Information Technology
- Diploma in Design (Interior and Landscape)
- Diploma in Electrical Engineering and Clean Energy
- Diploma in Facilities Management
- Diploma in Mechanical Engineering (Green Building Technology)
- Diploma in Quantity Surveying.

The study follows a previous UK NARIC benchmarking analysis of the BCA Diploma programmes in 2012, excluding the Diplomas in Architecture (Technology) and Quantity Surveying. UK NARIC's 2012 study found comparability to Polytechnic diploma standard in Singapore, between QCF Level 4 and 5 in the UK education system and AQF Level 5 in the Australian education system.

Methodology and challenges

The methodology used in this study is based on an established approach for evaluating qualifications founded on the principles of the Lisbon Recognition Convention. This approach involves an in-depth desk-based review and comparative analysis of the BCA Diploma programmes' core qualification design components[2] to selected reference points in Singapore, the UK and Australia:

- Polytechnic diploma[3] standard in Singapore;
- The Regulated Qualifications Framework (RQF) as the main reference point in the UK, supported by other reference points[4], where appropriate; and
- The Australian Qualifications Framework (AQF) as the main reference point in Australia, supported by other reference points[5], where appropriate.

The quality assurance and control mechanisms underpinning the BCA Diploma programmes were also considered for the purposes of determining consistency and reliability in development, delivery and assessment of the diploma programmes. In addition, the study was supported by first-hand classroom delivery observations and assessment evaluations during a UK NARIC site visit to the BCA Academy in August 2017.

[1] The BCA Academy is the education and research arm of the Singapore Building and Construction Authority (BCA) that offers training and education programmes in the built environment industry sector.

[2] Entry requirements; duration; structure; curriculum content; learning outcomes; methods of learning and assessment; and any academic progression outcomes or associated professional rights.

[3] In consultation with the BCA Academy, a selection of similarly-focussed Polytechnic diploma programmes were identified for comparison with six of BCA Diplomas programmes.

[4] Other reference points in the UK education system consulted, where appropriate, included the Framework for Higher Education Qualifications (FHEQ) and similarly-focussed qualifications.

[5] Other reference points in the Australian education system consulted, where appropriate, included similarly-focussed Training packages and qualifications.

A key difference in this study with the approach taken in UK NARIC's 2012 study is that this study takes a more balanced and holistic approach in determining comparability of the BCA Diplomas in Singapore, whereas the 2012 study placed more emphasis on how programme content mapped to specific Polytechnic diplomas. While programme content remains a consideration in this study, it is not an overriding factor for determining how the BCA Diploma programmes compare overall to Polytechnic diploma standard in the Singaporean education system. A further difference is that this study conducted a site visit where it was possible to examine a selection of assessments enabling a review of the methods and rigour of student evaluation, informing the overall level of comparability to the selected education systems. In addition, based on the information available from the comparable systems this study also considered the perceived occupational / academic / professional progression outcomes in determining comparability in the selected education systems, in addition to the intended learning outcomes or programme objectives where they were available.

The study faced two main challenges. Due to the volume of courses studied in an individual BCA Diploma, and the number of BCA Diplomas reviewed, it was necessary to analyse a selection of course syllabi in-depth. In this regard, analysis of programme content to the similarly-focussed Polytechnic diploma programmes focussed on comparing programme breadth. The second challenge was that analysis of the BCA Diploma programmes in Singapore was limited in scope to the breadth and depth of publicly-available information on the similarly-focussed Polytechnic diplomas selected as reference points. In this regard, additional consideration was given to perceived occupational, academic and professional progression.

Key findings

The eight BCA Diploma programmes analysed in this study are designed as sub-degree level qualifications to meet the needs of the construction and built environment industry in Singapore. With an established link and relationship to the industry regulator in Singapore, the BCA Diplomas are able to respond quickly to changes in policy and regulation. This unique positioning of the diploma programmes enables greater engagement with industry to inform appropriate development of the curricula for addressing skills requirements and providing work-ready graduates.

The BCA Diploma programmes offer an integrated curricula covering fundamental knowledge, concepts and skills in specialised subject areas (e.g. Building Information Modelling) as well as common courses in management, project work and communication; developing interdisciplinary transferrable skills both individually and in teams.

Study options for the BCA Diploma programmes are flexible. On a full-time basis the diplomas can be studied over three years. Students wishing to study the diplomas in two, or two-and-a half years instead of three, can opt for the BCA Academy Accelerated Diploma Option (ADO). Part-time study over a longer duration is also an option.

Courses are primarily delivered through lectures, lab or studio design work at the BCA Academy. Students are assessed throughout the diploma programmes by continuous assessment, written examinations and a 12 week Industrial Attachment (IA) or Final Year Project (FYP).

On completion, the BCA Diploma programmes provide access to technical or supervisory roles, certain professional certifications and further education and learning in Singapore and overseas, at institutional discretion.

The quality assurance procedures supporting qualification development, delivery and review are fit-for-purpose however marking approaches could be further enhanced through development of performance / grade descriptors and providing more comprehensive feedback to students on assessments.

Comparability of the BCA Diplomas in Singapore

UK NARIC finds the BCA Diploma programmes in Table 1 comparable to overall Polytechnic diploma standard in Singapore.

Table 1: Comparability of a selection of BCA Diploma programmes in Singapore

Qualification	Awarding Institution	Comparability overall
• Diploma in Architecture (Technology) • Diploma in Construction Engineering • Diploma in Construction Information Technology • Diploma in Design (Interior and Landscape) • Diploma in Electrical Engineering and Clean Energy • Diploma in Facilities Management • Diploma in Mechanical Engineering (Green Building Technology) • Diploma in Quantity Surveying.	BCA Academy	Is considered comparable to Polytechnic diploma standard.

The eight BCA Diploma programmes in Table 1 compare well to the entry requirements, structure and outcomes (including local and overseas academic progression opportunities, and professional rights) to the Polytechnic diplomas analysed in the study. The BCA Diplomas require a similar level of entry qualification as the Polytechnic diplomas analysed, and can be studied over three years. As with the Polytechnic diploma programmes, the BCA Diplomas include specialist content, an internship programme, project work and courses to develop transferrable skills. Similarities were also identified in curriculum content in the main, with any differences reflecting the specific focus of each award, having little impact on overall comparability of the BCA Diplomas to Polytechnic diploma standard.
The employment areas and employment roles the BCA Academy state graduates of their diploma programmes can enter on completion of the awards show broad comparability as well as variation with the Polytechnic diplomas for different diploma programmes. The actual work area and job role achieved on completion of BCA Diploma and Polytechnic diploma programmes is however dependent on the particular individual.

In regard to academic progression, as with the Polytechnic diplomas analysed in the study, holders of all eight of the BCA Diplomas can be considered by local higher education institutions for admission onto relevant undergraduate degree programmes, at institutional discretion. Most of the BCA Diploma programmes and the Polytechnic diploma programmes analysed are also considered for admission onto relevant undergraduate degree programmes by higher education institutions overseas, at institutional discretion. In addition, similar professional certifications were awarded to certain BCA Academy and Polytechnic diploma programmes.

Comparability of the BCA Diplomas in the UK

In the context of the UK education system, UK NARIC finds the eight BCA Diploma programmes in Table 2 comparable to RQF Level 4 standard overall with elements of the syllabus approaching RQF Level 5. In regard to UK NARIC's previous study's findings, which found the BCA Diplomas comparable to between QCF Level 4 and 5 standard in 2012, while UK NARIC can also see elements of the curriculum approaching RQF Level 5 in this study, the level of demand identified in the review of the assessments and teaching and guidance provided to students and observed during the site visit is more indicative of RQF Level 4 standard overall.

Table 2: Comparability of BCA Diploma programmes in the UK

Qualification	Awarding Institution	Comparability overall
• Diploma in Architecture (Technology) • Diploma in Construction Engineering • Diploma in Construction Information Technology • Diploma in Design (Interior and Landscape) • Diploma in Electrical Engineering and Clean Energy • Diploma in Facilities Management • Diploma in Mechanical Engineering (Green Building Technology) • Diploma in Quantity Surveying.	BCA Academy	Is considered comparable to RQF Level 4 standard.

The breadth and depth of knowledge and skills developed and assessed in the BCA Diploma programmes align well to RQF Level 4 standard overall, particularly in regard to using practical, theoretical and technical knowledge to address problems that are well-defined, complex and non-routine. While certain areas of programme content overlap with content identified in similarly-focussed RQF Level 5 qualifications, the BCA Diploma, assessment tasks assess level of demand comparable to RQF Level 4 standard.
Furthermore, the assistant and technician level occupational outcomes perceived for holders of the BCA Diplomas have greater association with autonomy and responsibility expectations at RQF Level 4 standard, than the significant responsibility assumed at RQF Level 5 standard.

In regard to academic progression opportunities in the UK, graduates of the BCA Diploma programmes could be considered eligible for admission or credit exemption onto relevant undergraduate degree programmes in the UK, to be determined on a case-by-case basis at institutional discretion.

Comparability of the BCA Diplomas in Australia

In the context of the Australian education system UK NARIC finds the eight BCA Diploma programmes in Table 3 comparable to AQF Level 5 standard overall.

Table 3: Comparability of BCA Diploma programmes in Australia

Qualification	Awarding Institution	Comparability overall
• Diploma in Architecture (Technology) • Diploma in Construction Engineering • Diploma in Construction Information Technology • Diploma in Design (Interior and Landscape) • Diploma in Electrical Engineering and Clean Energy • Diploma in Facilities Management • Diploma in Mechanical Engineering (Green Building Technology) • Diploma in Quantity Surveying.	BCA Academy	Is considered comparable to AQF Level 5 standard.

The BCA Diploma programmes compare particularly well to AQF Level 5 standard because they develop specialist technical knowledge, broad skills and application of skills in known or changing contexts within broad, established parameters. Although the BCA Diploma programmes compare broadly to the overall purpose and knowledge descriptors at AQF Level 6, the BCA Diploma assessments test skills and application closer to AQF Level 5 standard and, in addition, the perceived occupational outcomes have greater comparability to similarly-focussed AQF Level 5 qualifications, which aim to develop individuals for roles requiring a broad range of technical, managerial, coordination and planning skills.

As with holders of similarly-focussed Australian qualifications, graduates of the BCA Diploma programmes could be considered for direct entry into Year 2 of relevant four-year undergraduate degree programmes in Australia subject to previous courses studied, at institutional discretion.

In addition, the BCA Diploma programmes develop and assess employability skills such as communication, team-work and problem-solving in closer alignment to similarly-focussed AQF Level 5 qualifications than compared to the wider contexts of application expected at AQF Level 6 standard.

Published by:
UK NARIC
Suffolk House, 68-70 Suffolk Road
Cheltenham, Gloucestershire
United Kingdom
GL50 2ED

Email: projects@naric.org.uk
Telephone: +44 (0)1242 258609 Fax: +44(0)1242 258611