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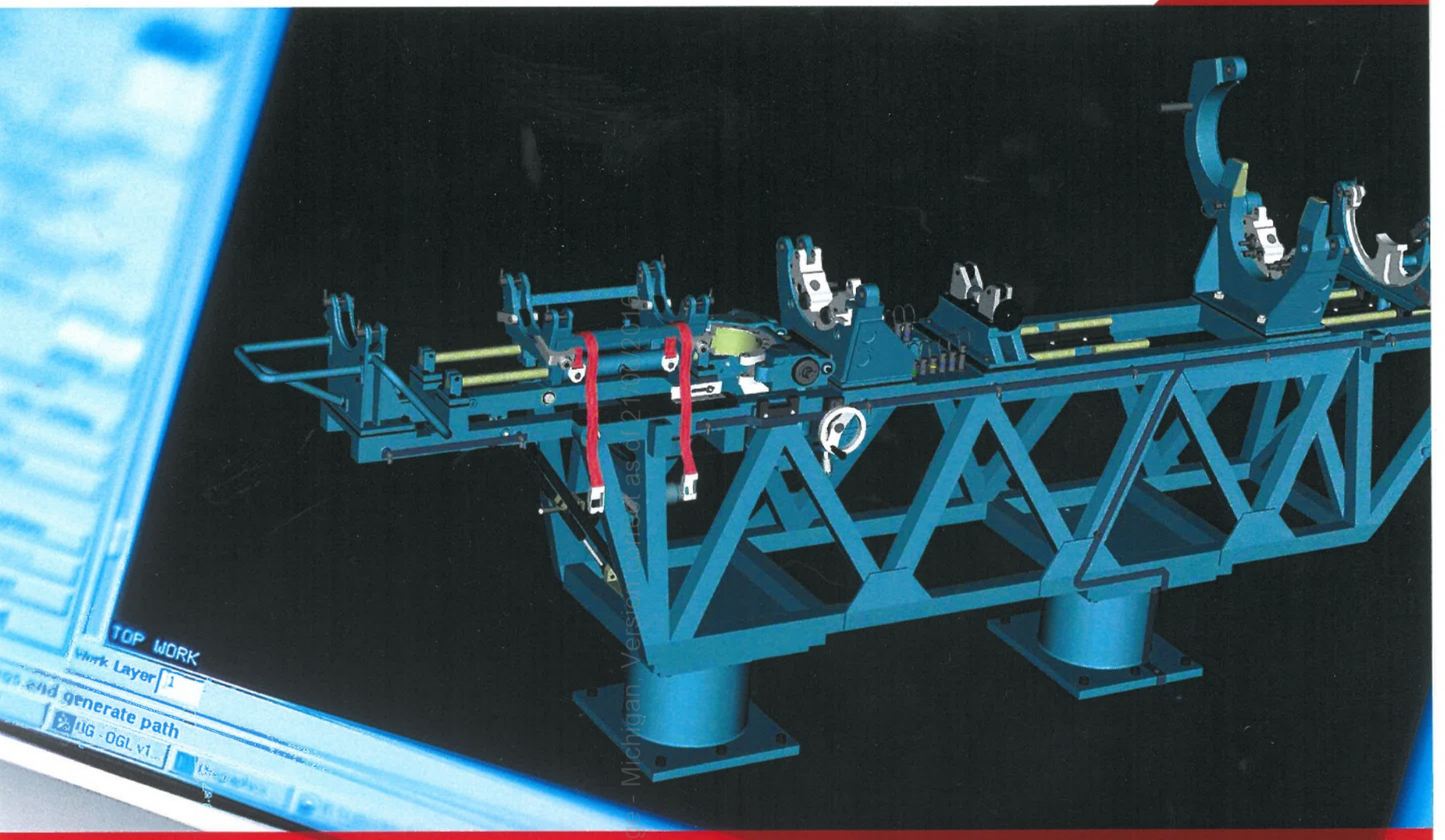

Drawing practice

A guide for schools and colleges to BS 8888:2006, Technical product specification (TPS)

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Third edition

Revised by Neil Phelps and Colin Simmons

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Foreword

The British Standards Institution (BSI) is the UK's National Standards Body responsible for preparing British Standards for product materials, systems and services. It presents the UK's view on standards in Europe and at an international level. BSI ensures that the interests of government, industry (including large and small businesses), professional associations, academia, societal groups and consumers are represented.

This Guide is one of a series of publications prepared by BSI Education to support the understanding and use of standards in secondary, further and higher education. It is a guide and should not be considered as a substitute for the full standard.

A full list of publications and online resources for teachers and students in schools and colleges can be found on the BSI Education website http://www.bsieducation.org.

Preface

Teachers may be familiar with the British Standard BS 308, which was the main reference guide for the production of technical drawings in a standard form, from its inception in 1927 to the withdrawal of most of its parts in 2000.

BS 8888:2000 (now superseded by the 2002, 2004 and 2006 editions) was introduced to transfer specification practices in use in the UK to the International Standards bases, [which are published by the International Organization for Standardization (ISO)]. This created a route map to the complex network of International Standards drafted to meet the demanding requirements of today's manufacturing technology and business practices and also established a unifying identity for the whole package of standards.

Following these developments, the scope of BS 8888 has been broadened. It now encompasses all other forms of technical product documents prepared as part of product specifications, regardless of the medium in which they are produced. BS 8888:2006 incorporates requirements and cross-references relating to electronic document management, 3D modelling and linear and geometric dimensioning, and tolerancing, in addition to the more traditional drawing indications and symbology. This expansion has been undertaken with the aim of creating an integrated system for product specifications.

The question could be asked 'Why produce drawings at all?', especially in this age of 3D modelling and computer-aided manufacture. The answer is simple: 'communication'. If a drawing does not communicate unambiguously it is virtually useless. Communication by drawing is still a prime method of conveying design intent that can be standardized internationally. Other methods, such as annotated 3D models, are evolving but in most cases will result in some form of drawing even if only for record purposes.

The primary driver for the development of BS 8888 has been the overarching requirement to provide a common language that will facilitate communication not only across national borders in support of today's global business model but also between disciplines. It is essential that designers, production engineers and metrologists can interact with precision and without ambiguity.

Scope

This Guide has been produced for teachers of Design and Technology at Key Stage 3 onwards and in Scotland is suitable for Graphic Communication and Product Design at Intermediate 2, Higher and Advanced Higher. It will also be a valuable resource for students studying Applied Engineering or Manufacturing at GCSE, GNVQ or Advanced VCE level. They will find it an essential reference guide when converting their design concepts into instructions for manufacturers.

It has been written to enable teachers and students to familiarize themselves with the British Standard for Technical Product Specifications (TPS), BS 8888:2006.

The aim of this Guide is to introduce students to the benefits of universally accepted ISO technical drawing practices utilizing the general principles and indications of dimensions and tolerances. It also introduces them to the benefits of using technical product documentation and specifications as specified in BS 8888:2006 when applied to current Design and Technology learning outcomes.

The Guide also emphasizes the links that exist between the process of quality management of products designed and manufactured in schools and colleges, and the process of good industrial practice where the design process is considered inseparable from verification (quality management). By raising students' awareness of these links, they will be better prepared to participate in the rapidly changing technologies of today's world.

Using this Guide

The layout of this Guide has been designed so that both student and teacher can access the relevant standard with relative ease. Sections have been included on all the main areas contained in current syllabi, such as orthographic layouts, dimensioning, sectioning, assembled views, exploded views and parts lists. All examples are taken from BS 8888:2006.

By ensuring that the presentation of their design concepts conforms to the current technical specification standards, students will become aware of the importance of