

Handbook

**THESAURUS OF AUSTRALIAN
CONSTRUCTION TERMS**

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THESAURUS OF AUSTRALIAN CONSTRUCTION TERMS

FIRST EDITION

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Abstract

First edition of a building and construction thesaurus prepared as an element of the NCRB Technical Information System for the Australian Building and Construction Industry under a BRDAC Australian Building Research Grant. Contains an alphabetical display of approximately 4800 primary entries, or descriptors, and almost 1500 secondary entries [non-descriptors] of major terms used in construction-related activities, together with hierarchical relationships (broader and narrower terms), associative relationships (related terms), preference relationships (use and use for), as well as scope notes. Prepared in line with recommendations of International Standard ISO 2788-1986, including rules for selection of terms, style and presentation. Includes appendix of key geographic terms and references.

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FOREWORD

With an annual turnover of around \$40,000 million, the Australian construction industry is a vital part of the domestic economy. All construction decisions require extensive information to ensure safety, functional efficiency and economy of the end products. Despite the significance of information in all of its processes, the industry is regarded as a poor information manager. All too often failures occur because information that should have been known was either ignored or missed completely. Too often, studies are undertaken without knowledge that the required information is already available or being undertaken elsewhere. There is no shortage of information, but there seems to be insufficient appreciation of the cost of information, and its value as a powerful resource. The widespread availability of computers has enabled the rapid automation of information holdings. But without standardized and authoritative lists of keywords to control information management, many databases have become closed systems thus limiting their value.

Lists of keywords and keyword relationships -- or thesauri -- have been prepared for scientific and technical disciplines and many other areas of activity during the past two decades. Several English-language thesauri for building, construction and engineering have been produced. But the models of Britain, the United States, Canada and New Zealand differ substantially and none of them is entirely satisfactory for direct adoption in Australia. At the international level, rules have been developed for the establishment of thesauri and these are laid down in ISO Standards.

A Thesaurus of Australian Construction Terms [TACT] as an integral element of a national building information management system was suggested ten years ago, initially by the National Committee on Rationalised Building [NCRB] and the National Public Works Conference [NPWC]. By providing agreed keywords for construction activities and items, it was felt that such a thesaurus would enable improved information description, identification, storage and retrieval. In 1987, the Building Research and Development Advisory Committee [BRDAC] sponsored work towards TACT, and a Building Research Grant was made available through the Department of Industry, Technology and Commerce in 1990 to complete the first edition of the Thesaurus of Australian Construction Terms. The late start on the development of an Australian construction thesaurus has enabled Australia to adopt or adapt the best features of international precedent.

The development of a construction thesaurus is a major task requiring an in-depth understanding of building terminology as well as information science. The Thesaurus of Australian Construction Terms represents a structured list of major construction keywords and keyword relationships for use by authors, editors, information managers and information searchers, librarians, and technical professionals with an interest in building topics. TACT includes the terms most commonly used in the Australian construction community, shows preferences where appropriate, provides linkages between groups of hierarchical terms, and directs users to terms for related concepts. The selection of the most appropriate term for any given concept reduces ambiguities. Hopefully, the existence of TACT will prevent researchers and others from borrowing or inventing new terms for established concepts. The creation of building industry databases for research activity and technical information will be facilitated by using TACT terms to control inputs, storage and retrieval.

Particular mention must be made of the agreement by the Building Research Association of New Zealand [BRANZ] to permit the use of its BRANZLINE Construction Thesaurus as a major input and source of many of the terms and term relationships featured in TACT. This is very much in the spirit of Closer Economic Relations and should provide a common keyword base in Australia and New Zealand to improve communication and information flow.

A special acknowledgement goes to the members of the NCRB, NPWC, and BRDAC whose support for a building thesaurus was essential to make it happen.

ON A THESAURUS

The word "Thesaurus" was coined by Peter Mark Roget in 1805 when he started work on his *"Thesaurus of English Words and Phrases Classified and Arranged so as to Facilitate the Expression of Ideas and Assist in Literary Composition"*. The term 'thesaurus' was chosen to represent a collection of English language terms and term relationships (synonyms and antonyms). Even though the first printed edition of Roget's Thesaurus was not published until forty-seven years later, hundreds of millions of copies have been sold world-wide during the past 140 years. And there are numerous adaptations of the original concept to classify and relate words on a conceptual basis. However, unlike a dictionary, a thesaurus does not provide definitions, and this has led to the issue of companion documents by many dictionary publishers.

A thesaurus can be defined as a "controlled set of indexing terms selected from natural language, and formally organized so that the *a priori* relationships between concepts are made explicit". Such relationships include a broader or narrower term focus, related terms, and term preferences. The indexing terms, in the form of nouns or noun phrases, represent the concepts. An indexing term may be a single word or a compound term made up of several words.

A thesaurus is a valuable tool in the information management process. It provides a selection of preferred terms (keywords) for use by:

- a. **Information Producers (Authors and Editors)** in identifying the subject matter of new or revised document(s); for example in abstracts, tables of contents, subject indexes, and major chapter and section headings. The thesaurus can also provide a useful 'check list' of topics to ensure that all areas of a subject have been covered.
- b. **Information Managers and Librarians** in the indexing of documents for inclusion in data base systems.
- c. **Information Searchers** when accessing data holdings in which retrieval is by keywords rather than by coding systems or library classification systems.

In turn, thesaurus users are best placed to suggest improvements to a thesaurus which, in line with new technological trends, language evolution, and community preferences, requires periodic modifications and updating. Derived from the Greek word *thesaurós*, meaning treasure or treasury, a good thesaurus can be a treasured book of terms and term relationships for use in writing, classification or information searching.

ACKNOWLEDGEMENTS

The assistance of many persons and organisations in the development of the Thesaurus of Australian Construction Terms is gratefully acknowledged. There are too many to list individually, but the efforts of three people deserve special mention; their contribution came at the start and the end of the thesaurus project. The first is Vincent Davies, an architect of Perth, Western Australia, and former Chairman of the National Committee on Rationalised Building, who cooperated in the original proposals for an Australian construction thesaurus and who coined the acronym TACT. The second is my wife Rosemary Milton, who cross-checked thesaurus entries and discovered many errors or inconsistencies as well as showing forbearance during the many late hours of technical review and editing. The third is Grahame Crocket, a senior executive in Australian Construction Services as well as an architect and planner, who made a wide range of useful comments on, and suggested many additions to, the December 1990 draft edition of TACT, most of which have been incorporated into this First Edition.

Hans J. Milton

June 1992

INTRODUCTION

The effectiveness of a technical information system depends on the documents it contains as well as the way in which such documents are identified, indexed for storage, and made part of an effective retrieval process. Available information has little value unless it can be found readily when needed. Moreover, if existing information has been missed because of poor information management or inadequate searching, this can cause significant embarrassment and potential losses, quite apart from the question of professional liability in the event of disputes or litigation. The processes of data identification, indexing, storage and retrieval are assisted greatly by the availability of a standard set of preferred terms (keywords or descriptors), and their use to identify and summarize the subject matter of documents.

The Australian construction community, at this stage, has no fully developed national databases of construction information or building research activity. Therefore, the industry is not constrained and has the opportunity to devise the most up-to-date construction information system suitable Australians needs, including a modern thesaurus in line with up-to-date international recommendations.

The initial proposal for a Thesaurus of Australian Construction Terms [TACT] was made in 1981 by the National Committee on Rationalised Building [NCRB] and the Research Coordination Committee of the National Public Works Conference [RCC/NPWC]. Subsequently, TACT was included as Information Element 3 in a joint proposal for an Australian building information management system, published in the NCRB Biennial Report 1980-82 (April 1983, page 8).¹ The proposal showed a three-stage development program:

- a) in the short term: conceptual development and an interim edition;
- b) in the medium term: refinement and a revised edition; and
- c) in the longer term: an on-line [or electronic] thesaurus.

By late 1984, the proposals for an integrated technical information system for the Australian construction community had been further developed. TACT was identified as a major element in a diagrammatic representation of “A Technical Information System for the Australian Building and Construction Industry” in the NCRB Biennial Report 1982-1984 (April 1985, page 13).² The NCRB proposals received public discussion at the National Technical Information Seminar, held in Sydney on 15 April 1986.³ In March 1987, the proposals were detailed comprehensively in a paper by the immediate past chairman of the NCRB, Dr. Frank Bromilow, and published as “The NCRB Strategy for a National Building Information System”.⁴ An updated diagram of the proposed national information system, dated October 1988, is shown as Figure 1 on page iv.

In 1986, the Building Research and Development Advisory Committee [BRDAC] endorsed the need for a Thesaurus of Australian Construction Terms and urged its development as a matter of priority, particularly in relation to the establishment of an Australian Building Research Activity Database.

The National Committee of Rationalised Building set up a Thesaurus Working Party in March 1987, chaired by the then Associate Director (Technical) of the National Building Technology Centre, Mr. G.W. Anderson. To speed up development, the Working Party examined international precedent among English-language construction thesauri, in particular British, North American and New Zealand models. By mid-1987, the Working Party had identified the thesaurus of the Building Research Association of New Zealand [BRANZ], used in the on-line building research information system BRANZLINE, as a model which could be adapted and developed into an Australia-New Zealand Construction Thesaurus.

For footnote references, see page 277

NCRB TECHNICAL INFORMATION SYSTEM FOR THE AUSTRALIAN BUILDING AND CONSTRUCTION INDUSTRY

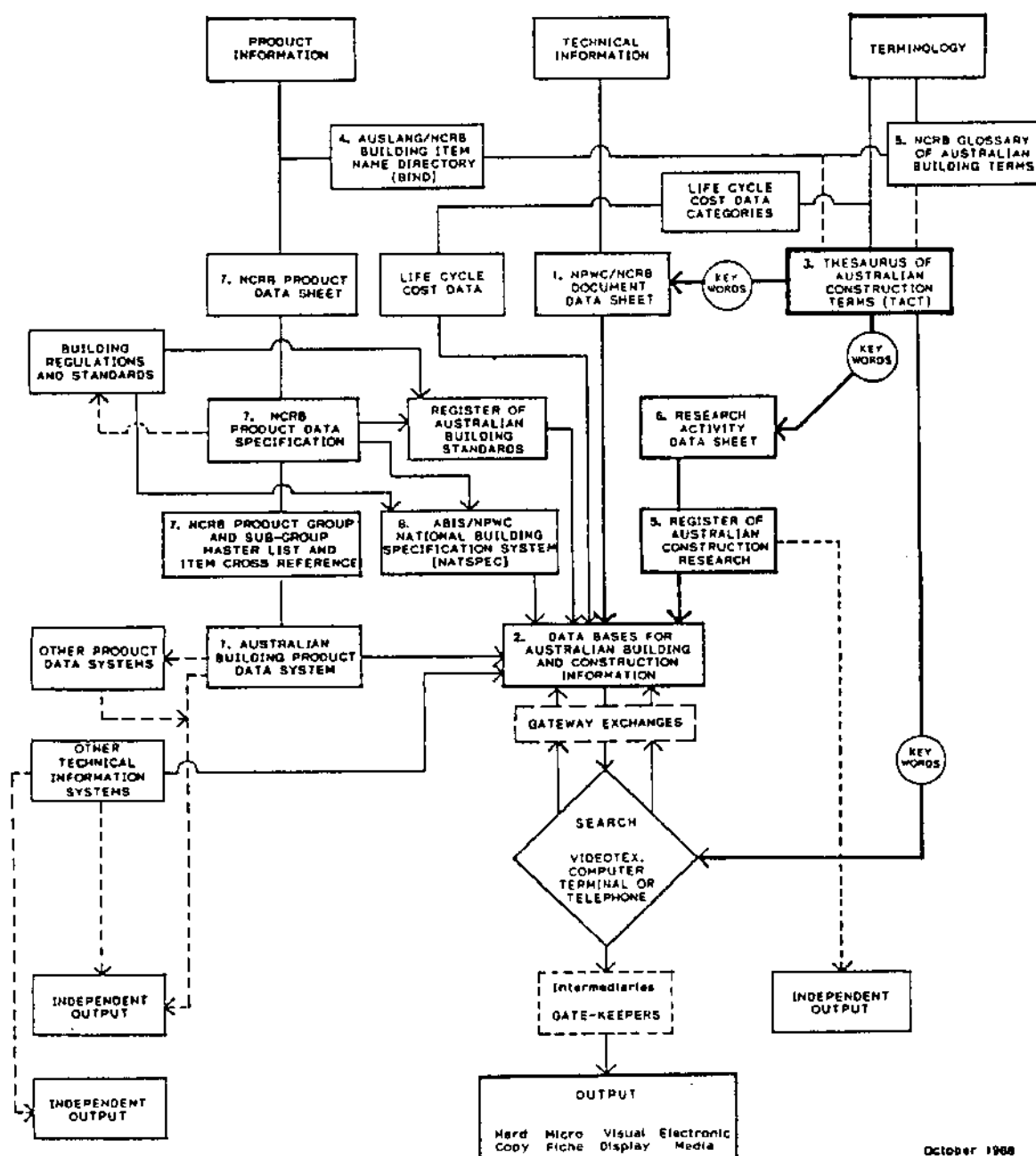


Figure 1: Diagram of Elements and Interrelationships in the Proposed NCRB Technical Information System for the Australian Building and Construction Industry.

The BRANZ Thesaurus, although initially derived from the British “Building Research Thesaurus (1975)”⁵ and the “Construction Industry Thesaurus (1976)”⁶, had been further developed over a lengthy period by practical application to an extensive collection of documents dealing with building and construction. However, the BRANZ Thesaurus was not available a public document, The Building Research and Development Advisory Committee, in October 1990, entered into an agreement BRANZ, under which BRANZ made available the latest electronic version of its Thesaurus as a major input into TACT.

Several other major thesauri for building and construction as well as related thesauri were taken into account during the development of TACT. These included the Canadian Thesaurus of Construction Science and Technology⁷, the INSPEC Thesaurus⁸, and the Thesaurus of Engineering and Scientific Terms⁹, published by the Engineers Joint Council of the United States. Additional descriptors were extracted from a range of significant Australian industry references, such as: the Building Code of Australia¹⁰, the annual List of Australian Standards for Construction¹¹, the National Building Specification System [NATSPEC] Classification¹², the NCRB Glossary of Australian Building Terms¹³, and CSIRO building research publications, including the Notes of the Science of Building¹⁴ produced by the National Building Technology Centre.

An international standard on the establishment and development of monolingual thesauri, ISO 2788-1986¹⁵, sets out recommendations for consistent practices in thesaurus construction, including general principles and procedures. It also contains models of alphabetical displays, systematic displays, and graphic displays (tree structures and arrowgraphs). It also contains models of alphabetical displays, systematic displays, and graphic displays (tree structures and arrowgraphs). Within the context of TACT, Appendix A establishes comprehensive rules for the selection of thesaurus terms, guidelines for style and presentation, and information on relationships between descriptors and methods of display. Appendix B shows an example of a typical “tree diagram”, many of which were produced during the development of TACT.

The selection of terms for inclusion in a thesaurus, as well as decisions on exclusions, is a matter for judgement by technical experts rather than librarians. The more experts are involved, the more comprehensive the thesaurus is likely to be. A balance has to be struck between making a thesaurus too narrow to be useful for the differentiation of significant concepts or items, to making it too wide and detailed to achieve the consolidation of like concepts. The optimum approach is a matter of iteration and, for this reason, a thesaurus is a dynamic document which must be subject to ongoing review. The opportunity also exists to develop “sectional thesauri” (or sub-thesauri) which expand the keywords of the main thesaurus by additional significant terminology used in specialised areas. For example, the keywords of a general construction thesaurus could be supplemented by sectional thesauri for functional areas such as acoustics or lighting terms; or disciplines, such as quantity surveying or structural engineering; or industries, such as the concrete, steel or timber industries.

A draft of the Thesaurus of Australian Construction Terms [TACT] was circulated for comment by the Construction and Services Industries Division of the Department of Industry, Technology and Commerce [DITAC] in December 1990. A preliminary edition, taking account of comments received, was prepared in December 1991 and forms the basis of this First Edition. Standards Australia acquired the copyright to the Thesaurus of Australian Construction Terms from DITAC on 29 April 1992.

The availability of the Thesaurus of Australian Construction Terms will enable the use of preferred terms in the production and indexing of documents and other information. This should ensure a much higher information retrieval rate, especially if the standard NPWC/NCRB Bibliographic Data Sheet¹⁶, or the BRDAC/NCRB Research Activity Data Sheet¹⁷ are used in the compilation of the data base. In conjunction with other Standards Australia documents, TACT will provide a major tool for use in more efficient information management. The acronym TACT is fortunate: the Thesaurus of Australian Construction Terms provides a special touch to manage the knowledge-base of a large and diverse industry.