

# **An Engineer's Guide to Fabricating Steel Structures**

## **Volume 2 Successful Welding of Steel Structures**

**By**

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**AN ENGINEER'S GUIDE TO FABRICATING STEEL STRUCTURES  
VOLUME 2 - SUCCESSFUL WELDING OF STEEL STRUCTURES**

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# Foreword

This book is the second volume of a two-volume book produced to provide engineers and detailers with an insight into fabrication, but it will be of interest to fabricators and others. The book originally started out as notes for a short course for structural engineers in welding and NDT practice put on at the Advanced Manufacturing Training Centre at Subiaco, Western Australia. The course was presented in association with the Association of Steel Construction and the Welding Technology Institute of Australia. It has changed since those early days, with the scope extending beyond welding to cover structural materials, fabrication practices, weld joint types, and detailing of structural connections.

The first volume of this book looks at materials and methods of steel fabrication practices, including cutting, forming and welding. This volume will concentrate on design detailing from a practical point of view. The aspects of detailing affecting producibility, project cost, and detail soundness are considered.

The first chapter concentrates on weld joint design, and on how the engineering and detailing affects producibility and productivity. The later chapters look at fabrication details for specific structure types. Aspects of quality management are also covered, including weld inspection.

The information comes partly from the author's experience as a Welding Engineer over 30 years. However, no work such as this is undertaken in isolation. Acknowledgments must go to the many previous works included in the reference list at the end of each section. All of these references are more detailed than this slim volume, and should be consulted for further information.

Thanks are particularly due to Rupert Grayston formerly of ASI who encouraged the author to produce this work, and who is responsible for presenting a number of case histories to the class. Thanks also to Jim McGregor of Metlabs who is responsible for presenting the course part on Non-destructive testing. Sue Bond and Trina Ding from the ASI assisted with checking references, proof reading and some diagrams.

## Acronyms

Today it is fashionable to use copious numbers of acronyms throughout publications, mostly to impress the reader with the writer's prowess rather than to help communication. The author has tried to use the minimum number, restricting the use to already accepted abbreviations. Each has been defined the first time it is used. If the reader finds an acronym that is not understood, a look at the index should find its first use and the definition. Volume 1 contains a useful glossary of metallurgical terms.