

Klaus Zwerger

Wood and Wood Joints

Building Traditions in Europe, Japan and China

With a Foreword by Valerio Olgiati

Fourth, Revised and Expanded Edition

**Birkhäuser
Basel**

CONTENTS

Foreword by Valerio Olgiati	VI
Introduction to the Fourth, Revised and Expanded Edition	VII

The Material

The Properties of Wood	10
Species of Wood	32

Working with Wood

Uses	42
The Carpenter	54
The Carpenter's Tools	67
Forms of Construction	78

Types and Functions of Wood Joints

Typology	85
Classification Systems in the Literature	91
Limits to the Classification Systems	97
The Functions of Wood Joints	100

Wood Joints and Their Evolution

The Role of the Tool	112
Building Tasks and Their Solutions	132
Log Construction	140
Column-and-Beam Construction	153
Roof Construction	176
The Influence of Climatic Conditions	211
Abundance and Scarcety of Timber	226

Wood Joints as an Expression of Aesthetic Values

The Visible and the Invisible	247
Protection and Prestige	253
Construction and Decoration	258

Structural Timber Construction in China

Building Methods: Log Construction and Column-and-Beam Construction	268
Structural Wood Preservation: Raised Platform and Cantilevered Roof	275
Choice of Materials	278
The Structure and Construction of Temple Buildings	279
The Construction Principles of Bracket Complexes	289
Dougong	290
The Economics of Construction	297

Bibliography	306
Acknowledgements	313
About the Author	313
Index of Persons and Buildings	314
Index of Places	315
Subject Index	316