Program for summer conference on plastic design of multistory frames, August 1965

Fritz Lab

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# PROGRAM

## PLASTIC DESIGN OF MULTI-STORY FRAMES

<table>
<thead>
<tr>
<th>Time</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Morning Lectures</strong></td>
<td>9:15 AM-12:30 PM, Packard Laboratory Auditorium</td>
</tr>
<tr>
<td><strong>Afternoon Demonstrations</strong></td>
<td>2:00 PM-4:00 PM, Fritz Engineering Laboratory</td>
</tr>
<tr>
<td><strong>Evening Guest Lectures</strong></td>
<td>7:30 PM-9:00 PM, Packard Laboratory Auditorium</td>
</tr>
<tr>
<td><strong>Sat. Morning Guest Lectures</strong></td>
<td>9:15 AM-12:00 Noon, Packard Laboratory Auditorium</td>
</tr>
</tbody>
</table>

### TUESDAY, AUGUST 24, 1965

**WELCOMING REMARKS AND INTRODUCTION**

<table>
<thead>
<tr>
<th>Morning</th>
<th>Activities</th>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td>General Design Problems—George C. Driscoll, Jr.</td>
</tr>
<tr>
<td>2.</td>
<td>Basic Concepts in Plastic Design—Lynn S. Beedle</td>
</tr>
</tbody>
</table>

**Afternoon**

<table>
<thead>
<tr>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Experiments—Tension Coupons, Stub Column Test, Residual Stress</td>
</tr>
</tbody>
</table>

**Evening**

<table>
<thead>
<tr>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clambake (Buses leave Fritz Laboratory at 4:30 p.m. and return at 10:00 p.m.)</td>
</tr>
</tbody>
</table>

### WEDNESDAY, AUGUST 25, 1965

<table>
<thead>
<tr>
<th>Morning</th>
<th>Activities</th>
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</thead>
<tbody>
<tr>
<td>3.</td>
<td>Beams—Theodore V. Galambos</td>
</tr>
<tr>
<td>4.</td>
<td>Columns—Le-Wu Lu</td>
</tr>
<tr>
<td>5.</td>
<td>Connections—John W. Fisher</td>
</tr>
</tbody>
</table>

**Afternoon**

<table>
<thead>
<tr>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Braced Frame Test</td>
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</table>

**Evening**

<table>
<thead>
<tr>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Practical Design Problems for Multi-Story Frames—Ira Hooper</td>
</tr>
<tr>
<td>Multi-Story Frame Design in Earthquake Zones—Henry J. Degenkolb</td>
</tr>
<tr>
<td>Structural Design in the Steel Making Industry—Bruce G. Johnston</td>
</tr>
</tbody>
</table>

### THURSDAY, AUGUST 26, 1965

<table>
<thead>
<tr>
<th>Morning</th>
<th>Activities</th>
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</thead>
<tbody>
<tr>
<td>6.</td>
<td>Preliminary Design of Braced Frames—George C. Driscoll, Jr.</td>
</tr>
<tr>
<td>7.</td>
<td>Design of Braced Frames—Bracing—Theodore V. Galambos</td>
</tr>
<tr>
<td>8.</td>
<td>Design of Braced Frames—Beams—Alexis Ostapenko</td>
</tr>
</tbody>
</table>

**Afternoon**

<table>
<thead>
<tr>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Composite Beam Test Subassemblage Test</td>
</tr>
</tbody>
</table>

**Evening**

<table>
<thead>
<tr>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earthquake-Resistant Design of Tall Buildings—Nathan M. Newmark</td>
</tr>
<tr>
<td>Non-Linear Response of Tall Buildings to Earthquake Motions—Ray W. Clough</td>
</tr>
</tbody>
</table>
FRIDAY, AUGUST 27, 1965

Morning 9. Column Deflection Curves—Theodore V. Galambos
          10. Subassemblages and Restrained Columns Without Sway—Le-Wu Lu

Afternoon Tours of Bethlehem Steel Corp.—Bethlehem Plant and Homer Research Laboratories

Evening Behavior of Actual Buildings in an Earthquake—Glen V. Berg
           Studies in Composite Construction—John W. Roderick

SATURDAY, AUGUST 28, 1965

Morning Plastic Design of Braced Multi-Story Frames—Jacques Heyman
          Review of Recent Japanese Research in Plastic Design—Yuzuru Fujita
          Use of Analog Computers in the Analysis and Design of Steel Frames—Robert L. Ketter

MONDAY, AUGUST 30, 1965

Morning 11. Design of Braced Frames—Columns—Le-Wu Lu
          12. Examples of Braced Frame Design—J. Hartley Daniels
          13. Behavior of Unbraced Frames—Alexis Ostapenko

Afternoon Test of High Strength Steel Frame, Unbraced

Evening Methods Proposed in Britain for the Design of Multi-Story Sway Frames—Michael R. Horne
          Plastic Analysis and Minimum Weight Design of Multi-Story Frames—Tadahiko Kawai

TUESDAY, AUGUST 31, 1965

          15. Frame Buckling—Le-Wu Lu

Afternoon Frame Buckling Test

Evening Research on Unbraced Frames—Minoru Wakabayashi
          Optimum Design of Structures—Bruno Thurlimann

WEDNESDAY, SEPTEMBER 1, 1965

          17. Restrained Columns Permitted to Sway—Theodore V. Galambos

Afternoon Tours of Bethlehem Steel Corp.—Bethlehem Plant and Homer Research Laboratories

Evening Banquet (7:30 p.m. Grace Hall)

THURSDAY, SEPTEMBER 2, 1965

Morning 18. Design of Columns in Unbraced Frames—Le-Wu Lu
          19. Examples of Unbraced Frame Design—J. Hartley Daniels
          20. Closing Remarks—George C. Driscoll, Jr.

Afternoon Unbraced Frame Test
CONFERENCE LECTURERS

Dr. Lynn S. Beedle
Lehigh University, Bethlehem

Dr. George C. Driscoll, Jr.
Lehigh University, Bethlehem

Dr. John W. Fisher
Lehigh University, Bethlehem

Dr. Theodore V. Galambos,
Lehigh University, Bethlehem

Dr. Le-Wu Lu
Lehigh University, Bethlehem

Dr. Alexis Ostapenko
Lehigh University, Bethlehem

Mr. J. Hartley Daniels
Lehigh University, Bethlehem

GUEST SPEAKERS

Dr. Glen V. Berg
Prof. of Civil Engineering, University of Michigan—Ann Arbor

Dr. Roy W. Clough
Prof. of Civil Engineering, University of California—Berkeley

Mr. Henry J. Degenkolb
H. J. Degenkolb & Associates, Engineers, San Francisco

Dr. Yuzuru Fujita
Asst. Prof. of Naval Architecture, University of Tokyo—Japan

Dr. Jacques Heyman
Prof. of Civil Engineering, University of Cambridge—England

Mr. Ira Hooper
Seelye-Stevenson-Value-Knecht, Consulting Engineer—New York

Dr. Michael R. Horne
Prof. of Civil Engineering, University of Manchester—England

Dr. Bruce G. Johnston
Prof. of Civil Engineering, University of Michigan—Ann Arbor

Dr. Tadahiko Kawai
Assoc. Prof., Institute of Industrial Science, University of Tokyo—Japan

Dr. Robert L. Ketter
Prof. & Head of Department of Civil Engineering, State University of New York at Buffalo

Dr. Nathan M. Newmark
Prof. of Civil Engineering; Head, Department of Civil Engineering, University of Illinois—Urbana

Dr. John W. Roderick
Challis Professor of Civil Engineering & Head of School of Engineering, University of Sydney—Australia

Dr. Bruno Thurlimann
Prof. of Civil Engineering, Federal Institute of Technology, Zurich, Switzerland

Dr. Minoru Wakabayashi
Prof. Disaster Prevention Research Institute, Kyoto University—Japan