

# Applied Research on Civil Engineering and Environment (ARCEE)



Performance Evaluation of Highrise Building  
Structure Based on Pushover Analysis with  
ATC-40 Method

(Dermawan Zebua, Koespiadi)

Analysis of the Effect of Pavement Conditions on Vehicle Speed

(Sekar Ayu Kusumawardhani, Nuzul Barkah Prihutomo,  
Danang Eko Saputro)

Comparison of BIM and Conventional Method to Analyze  
Dimension and Volume of Abutment

(Rayhan Anugrah Yuliano, Nunung Martina, Safri)

Kinematic Hardening Model Comparison of Square Hollow  
Section Under Cyclic Bending

(Aniendhita Rizki Amalia, Kenshi Ochi)

Soft Soil Consolidation with the Electroosmosis Effect

(Hurul 'Ain, Firmanilah Kamil)

## **Applied Research on Civil Engineering and Environment (ARCEE)**

Applied Research on Civil Engineering and Environment (ARCEE) is intended to be the journal publishing articles reporting the result of research on civil engineering and environment. Applied Research on Civil Engineering and Environment (ARCEE) invites manuscripts in the areas: material, structure, geotechnical, construction management, water resources, and environment, transportation, and implementation method & health and safety work in planning, operating, evaluating, and maintenance of building, bridge, and environment.

Applied Research on Civil Engineering and Environment (ARCEE) is published two times a year (August and February) by Civil Engineering Department of Politeknik Negeri Jakarta. The ARCEE had been registered number e-ISSN 2714-6553.

### **Editorial Board:**

Editor in Chief	: Dyah Nurwidyaningrum
Managing Editor	: Muhammad Fathur Rouf Hasan
Editors	: 1. Erlina Yanuarini 2. Linda Sari Wulandari 3. Achendri M. Kurniawan 4. Eri Ester Khairas 5. Lilis Tiyani 6. Hassan Ismail 7. Pungky Dharma Saputra

EDITOR

APPLIED RESEARCH ON CIVIL ENGINEERING AND ENVIRONMENT (ARCEE)  
CIVIL ENGINEERING POLITEKNIK NEGERI JAKARTA

Email: [arceejournal@pnj.ac.id](mailto:arceejournal@pnj.ac.id)

Website : <http://jurnal.pnj.ac.id/index.php/ARCEE/index>

Phone: 021-7863532

## Applied Research on Civil Engineering and Environment (ARCEE)

### Reviewer Board:

- |                                 |                                     |
|---------------------------------|-------------------------------------|
| 1. Abraham Seno Bachrun         | Universitas Mercu Buana             |
| 2. Adiwijaya                    | Politeknik Negeri Ujung Pandang     |
| 3. Afrizal Nursin               | Politeknik Negeri Jakarta           |
| 4. Aniendhita Rizki Amalia      | Kumamoto University, Japan          |
| 5. Anis Rosyidah                | Politeknik Negeri Jakarta           |
| 6. Arliandy Pratama Arbad       | Politeknik Negeri Jakarta           |
| 7. Eva Azhra Latifa             | Politeknik Negeri Jakarta           |
| 8. Denny Yatmadi                | Politeknik Negeri Jakarta           |
| 9. Haryoto Kusnopranto          | Universitas Indonesia               |
| 10. Ilham                       | Universitas Halu Oleo               |
| 11. Leonardus Setia Budi Wibowo | Universitas Widya Kartika           |
| 12. Luthfi Muhammad Mauludin    | Politeknik Negeri Bandung           |
| 13. Mustaffa B. Anjang Ahmad    | Universiti Tun Hussein Onn Malaysia |
| 14. Putera Agung Maha Agung     | Politeknik Negeri Jakarta           |
| 15. Ratih Indri Hapsari         | Politeknik Negeri Malang            |
| 16. Riawan Gunadi               | Politeknik Negeri Bandung           |
| 17. Sony Pramusandi             | Politeknik Negeri Jakarta           |
| 18. Yanuar Setiawan             | Politeknik Negeri Jakarta           |

EDITOR

APPLIED RESEARCH ON CIVIL ENGINEERING AND ENVIRONMENT (ARCEE)  
CIVIL ENGINEERING POLITEKNIK NEGERI JAKARTA

Email: [arceejournal@pnj.ac.id](mailto:arceejournal@pnj.ac.id)

Website : <http://jurnal.pnj.ac.id/index.php/ARCEE/index>

Phone: 021-7863532

## TABLE OF CONTENTS

<b>Cover</b> .....	i
<b>Editorial Board Structure</b> .....	ii
<b>Table of Contents</b> .....	iv
<b>Performance Evaluation of Highrise Building Structure Based on Pushover Analysis with ATC-40 Method</b>	
Dermawan Zebua, Koespiadi.....	54—63
<b>Analysis of the Effect of Pavement Conditions on Vehicle Speed</b>	
Sekar Ayu Kusumawardhani, Nuzul Barkah Prihutomo, Danang Eko Saputro .....	64—74
<b>Comparison of BIM and Conventional Method to Analyze Dimension and Volume of Abutment</b>	
Rayhan Anugrah Yuliano, Nunung Martina, Safri .....	75—87
<b>Kinematic Hardening Model Comparison of Square Hollow Section Under Cyclic Bending</b>	
Aniendhita Rizki Amalia, Kenshi Ochi .....	88—103
<b>Soft Soil Consolidation with the Electroosmosis Effect</b>	
Hurul ‘Ain, Firmanillah Kamil .....	104—112

EDITOR

APPLIED RESEARCH ON CIVIL ENGINEERING AND ENVIRONMENT (ARCEE)  
CIVIL ENGINEERING POLITEKNIK NEGERI JAKARTA

Email: [arceejournal@pnj.ac.id](mailto:arceejournal@pnj.ac.id)

Website : <http://jurnal.pnj.ac.id/index.php/ARCEE/index>

Phone: 021-7863532