

## Training on the Installation of Steel Frame Construction to the Johar Baru Community, Central Jakarta City

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### ARTICLE INFO

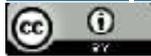
*Keywords:* Training, Steel Frame Construction, Skill Development, Community Service

*Received :* 18, October

*Revised :* 20, December

*Accepted:* 22, February

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### ABSTRACT

The decreasing supply of conventional timber resources, specifically teak, combined with escalating material expenses, has prompted investigation into substitute building components for structural applications such as roofing frameworks. Low-carbon steel presents promising characteristics including reduced weight, malleability, and immunity to insect degradation, positioning it as a practical option. Nevertheless, implementing this metal-based construction approach necessitates skilled personnel to maintain both efficiency and workmanship standards. Addressing this requirement, the Community Engagement Division of Christian University of Indonesia organized a capacity-building workshop focused on low-carbon steel framework assembly for Johar Baru Village inhabitants. The initiative utilized educational seminars coupled with practical demonstration techniques to strengthen participants' comprehension of material properties, installation protocols compliant with technical specifications, and hands-on proficiency in autonomous roof truss construction.

## INTRODUCTION

Located within Central Jakarta's administrative boundaries, Johar Baru Sub-district represents one among eight territorial divisions, accommodating a concentrated residential population totaling 138,019 individuals (comprising 69,961 men and 68,058 women) distributed across 8,453 household units. This administrative zone encompasses four distinct village areas: Johar Baru, Galur, Kampung Rawa, and Tanah Tinggi, collectively organized into 40 neighborhood associations (RW) and 556 community units (RT). As a constituent village within this sub-district, Johar Baru exhibits notable demographic patterns, registering 45,275 residents (22,524 men and 22,751 women) organized under 14,914 family heads. The administrative framework comprises 11 RW zones, 173 RT clusters, and 364 family welfare groups (Dasa Wisma), establishing it as an actively populated locality characterized by robust grassroots organizational infrastructure that facilitates developmental programs and municipal service delivery throughout Central Jakarta's urban landscape.



Figure 1. Map of Johar Baru Village Area

## IMPLEMENTATION AND METHODS

The execution framework for the community engagement initiative titled "Advancing Technical Competencies in Metal Framework Construction among Johar Baru Village Residents, Central Jakarta" progressed through sequential operational phases. (1) Initial preparatory and orientation procedures encompassed team formation for community outreach, identification of participating faculty members and learners, procurement of administrative clearances and official endorsements, alongside mobilization of requisite activity resources. (2) Subsequent fieldwork encompassed on-site assessments within Johar Baru Village's residential zones in Central Jakarta, enabling direct evaluation of infrastructural conditions and dwelling amenities, with particular emphasis on prevailing modest-scale and basic structural installations. (3) The execution phase incorporated dual core components: public awareness campaigns coupled with educational consultations, and experiential workshop sessions designed to enhance communal proficiencies in metal framework assembly techniques. (4) The concluding phase integrated guidance provision, performance assessment, and continuity mechanisms, implemented to secure evaluative input regarding program efficacy while ensuring sustained and effective community-driven activity perpetuation.

## RESULTS AND DISCUSSION

The execution of the community engagement initiative focused on "Advancing Technical Competencies in Metal Framework Construction among Johar Baru Village Residents, Central Jakarta" progressed through systematically organized operational phases, detailed as follows:

The initial preparatory and orientation phase encompassed team formation for outreach activities, incorporating faculty and student participant selection, administrative authorization procurement, and instructional resource mobilization. This foundational coordination period functioned as preliminary engagement with partner communities, proving instrumental for determining communal requirements to be addressed through ensuing intervention programs. Furthermore, this phase sought to evaluate target area capabilities while diagnosing prevailing challenges as groundwork for formulating contextually appropriate resolution strategies. Procedural activities throughout this period included cataloging issues with spatial documentation, aggregating community perspectives to establish priority demands, and systematically charting local assets alongside constraints to facilitate strategic planning.

The subsequent fieldwork phase involved comprehensive on-site assessments within Johar Baru Village's residential districts in Central Jakarta, enabling direct examination of infrastructural conditions and dwelling facilities, emphasizing existing modest-scale and elementary structures. The investigative approach utilized primary information acquisition techniques, encompassing location surveys, written record compilation with visual documentation, resident consultations, and empirical field examinations. Beyond identifying extant capabilities and obstacles concerning urban infrastructure and amenities, this phase incorporated analytical procedures directed toward cultivating available resources while mitigating diagnosed deficiencies to bolster enhancement initiatives. To accomplish these aims, community consultation assemblies in discussion formats were convened, engaging village inhabitants, civic leadership, and pertinent subject matter experts aligned with the implemented intervention.



**Figure 2. UKI Coordination with the Lurah and Staff of Johar Baru**



**Figure 3. Coordination Between UKI and PT Kencana, Head of Economy and Development Section, Community Leaders**

***The Tertiary Phase Constitutes the Execution Stage, Actualized through Dual Primary Operational Processes***

Public Awareness Campaigns and Educational Dissemination Designed to augment collective understanding regarding low-carbon steel components, encompassing material properties and structural profile specifications aligned with Indonesia's regulatory framework (SNI 8399:2017). This intervention additionally introduces metal framework construction prototypes, connection apparatus, steel sectioning equipment, cutting methodologies, joint assembly procedures, and structural erection protocols grounded in pertinent design codes and technical directives.



**Figure 4. Presentation of Community Service by UKI Team**



**Figure 5. Group Photo Between Johar Baru village apparatus, Community Service Team, Kencana Baja Ringan and HAPI**



**Figure 6. Atmosphere and Socialization Materials**



**Figure 7. Photo After Socialization**

**Metal Framework Assembly Workshops** This intervention seeks to cultivate communal proficiencies in hands-on construction of steel structural prototypes. Throughout experiential training sessions, attendees engage directly in prototype fabrication following supplied technical blueprints. This pedagogical approach enables participants to immerse themselves actively within learning activities through inquiry-based exploration and practice of precise measurement protocols, metal sectioning utilizing mechanical cutters and manual shears, alongside drill operation for securing fastener connections. During the culminating training segment, each participant's assembled steel construction prototype undergoes evaluation, critique, and collaborative review to deliver constructive feedback concerning dimensional precision and fabrication quality relative to specifications delineated in technical drawings.



**Figure 8. Mild Steel Construction Installation Practices**

**Table 1. Realization of Activity Program**

NO	DAY/DATE	ACTIVITIES	LOCATION	
01	D-Day 3	Licensing & cooperation coordination	Record	
02	D-Day Wednesday, 24 October 2025	Participant Registration	Johar Baru Village (Indoor)	
		09.00	Opening Mc	Johar Baru Village (Indoor)
			Singing the Indonesian National Anthem	
			Opening Prayer	
			Presentation from the Christian University of Indonesia by Dr.Ir.Ktut Silvanita Mangani, M.A.	Johar Baru Village (Indoor)
			Presentation from the Head of the Economic and Development Section of Johar Baru Village	Johar Baru Village (Indoor)
			Presentation from PT. Kencana Maju Bersama by Mr. Riyanto Setiabudi	Johar Baru Village (Indoor)
			Group Photo Session	
			Knowledge Products PT. Kencana Maju Bersama by Mr. Resky Septiawan	Johar Baru Village (Indoor)
			Steel Frame Installation Training Theory Materials by BySTEP	Johar Baru Village (Indoor)
		11.30	Discussion and Q&A on Lightweight Steel Installation Training Theory Material.	Johar Baru Village (Indoor)
		12.00-13.00	Lunch Break	
		13.00-17.00	Implementation of Steel Frame Construction Training. PIC by Ir. Setiyadi, M.T	Johar Baru Village (Outdoor)
17.00	Closing			

The quaternary phase encompasses guidance provision, performance assessment, and continuity mechanisms, implemented to secure evaluative input regarding whether executed program interventions maintain effective and sustained operation, while ensuring ongoing community-driven advancement and preservation.

## **CONCLUSIONS AND RECOMMENDATIONS**

The community engagement initiative (PkM) designated "Capacity-Building Workshop for Metal Framework Assembly Proficiency," orchestrated by Christian University of Indonesia (UKI) in partnership with PT Kencana Maju Bersama and Indonesian Applicator Association (HAPI) within Johar Baru Village, Central Jakarta, effectively accomplished its fundamental aim of advancing collective knowledge and applied competencies in steel structural construction.

Employing interactive awareness campaigns coupled with experiential training methodologies, attendees cultivated comprehensive comprehension of low-carbon steel material properties, technical installation protocols, and hands-on capabilities for autonomous roof truss fabrication. This intervention yielded not merely immediate advantages through individual competency elevation, but additionally established enduring prospects by catalyzing community collaboration networks, reinforcing alliances with industrial stakeholders, and pioneering empowerment frameworks grounded in technical proficiency development.

This undertaking underscores the critical significance of collaborative synergies among academic institutions, professional consortiums, commercial partners, and municipal authorities in facilitating human capital quality enhancement. Anticipated outcomes include sustainable replication of analogous programs with territorial expansion to comparable regions demonstrating similar technical training requirements, thereby accelerating developmental trajectories founded upon indigenous capacity strengthening and competency-driven self-reliance.

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