

Recovery Network

"A Newsletter from International Recovery Platform"



IRP Partners:



January 2010 Edition

~ IRP in 2010 ~

1. IRP Developing Guidance Notes on Recovery

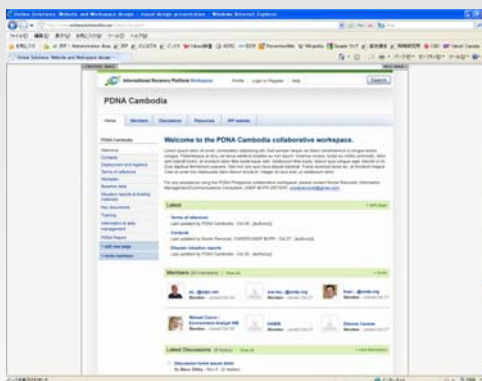
There is a gap in knowledge on recovery. There is an abundance of documents, plans and policies addressing the preparedness phase of disasters. However, no significant systematic post-disasters' study has been undertaken with a focus on the long-term, sustainable community recovery and rebuilding needs of the thematic areas such as shelter, environment, livelihoods and so forth. Deficiency in material available on recovery is felt. Guidelines currently available focus on mitigation and DRR. Guidance notes focused on recovery are not available. While it is conceded that preventive measures are vital, in the ex-post situation availability of knowledge products reflecting best practices and lessons learned is critical for effective and sustainable recovery. Such knowledge products are currently unavailable.

IRP is supporting the development of sector specific recovery tools and guidance notes, drawing upon substantial experience of IRP partners and the recovery community. The guidance notes have an emphasis on lessons learned and good practices from global recovery operations. The development of guidance notes will be for the following sectors:

- Shelter
- Environment
- Public infrastructure
- Governance
- Health
- Psycho-social aspects
- Climate Change Adaptation
- Livelihood
- Gender

The first drafts will be available by March 2010, with the final products launched in May 2010. We welcome your suggestions and reference to material which could contribute to the guidance notes.

2. A Workspace for Post Disaster Needs Assessment (PDNA) on the IRP website



PDNA collaborative workspaces, provided on the IRP website, aim to provide stakeholders with web-based platforms through which they can share data, information and conduct discussions online throughout the entire PDNA process.

3. Workshop on "Climate Change Adaptation and Recovery"

Organized in collaboration with UNEP, the "Climate Change Adaptation and Recovery" Workshop will be held February 25 at the IRP Meeting Hall in Kobe, Japan. The workshop aims to:

1. Gather cases and examples for the Guidance note on CCA and Recovery, demonstrating good practices from recovery efforts that integrated CCA and lessons from recovery efforts which failed to integrate CCA.
2. Identify resources and key documents to be included in to the Guidance notes.
3. Formation of a "CCA and Recovery Think Tank" hosted by the IRP, which will endeavor to continually update information on integration of CCA through sharing experiences. This Think Tank will function as a network of institutions and individuals who can contribute to this theme.

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Upcoming IRP events :

25th of February, 2010

The Workshop on "Climate Change Adaptation and Recovery" in Kobe

For more details, visit our website:

www.recoveryplatform.org

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1. The Use of Recycled Brick Masonry Wall Rubble for Post - Yogyakarta Earthquake Reconstruction

By Iman Satyarno

Introduction

Most communities and governments assume that brick masonry wall rubble is debris that must be disposed of. As can be seen in Figure 1, most of the rubble was thrown to the side of the roads. This impeded traffic and caused traffic jams. To avoid this problem, the government carried out a program to clean away the rubble (Yogyakarta Special Region and Central Java, 2007). As the amount of



Figure 1. Masonry brick wall rubble by the side of a road. rubble was huge, this effort was very costly.

To ensure that money is spent as effectively as possible, a series of studies have been conducted by the Department of Civil and Environmental Engineering at Gadjah Mada University to develop a procedure for recycling the rubble from damaged brick walls. This is primarily because the price of brick has doubled as compared with the price before the earthquake (Pohan, 2008). Secondly, since the number of houses that must be rebuilt is very large, there will be a problem in supplying the required brick. The following sections discuss the procedures for recycling rubble.

Crushing the rubble

The process of crushing the brick masonry wall rubble can be performed manually or mechanically. This is done to change the brick masonry wall rubble into fine aggregate that can be used for making mortar or concrete. Manual crushing requires the use of a 0.3 to 1.0 kg hammer. Mechanical crushing can be carried out using a mobile stone crusher made by the local people of Bantul, as shown in Figure 2. After crushing, the rubble is filtered to create a fine aggregate with a maximum diameter of 5 mm. The site investigation revealed that each machine can crush enough brick masonry wall rubble to create about 15 m³ of fine aggregate per day. This requires one stone crusher operator and six other workers. To make 5 m³ of fine aggregate, the stone crusher needs three liters of diesel oil, yielding diesel oil consumption of 0.6 liter/m³. No quantitative data about how much brick masonry wall rubble has been ground into



Figure 2. Mechanically crushing brick rubble using a mobile stone crusher to create fine aggregate.

fine aggregate is currently available. However, several stone crushers have been deployed to several villages, and crushing operations have been ongoing for some time.

Constructing houses using the cast In-Situ method using mortar made of recycled brick rubble

The material needed to make cast in-situ walls is made of mortar using fine aggregate from the crushed brick rubble as discussed above. The volumetric ratio of cement, water, and fine aggregate from crushed brick rubble is 1:1.25:5. In addition, steel bars 6 mm in diameter need to be installed for horizontal and vertical reinforcement with spacing of around 40 cm inside the wall to prevent cracks due to shrinkage. Some formwork units are also required for molding the mortar in this cast in-situ method. The cast in-situ process can be explained as follows (Satyarno, 2008).

1. Construct plinth beam and columns like the ones required using conventional construction methods. Put anchorages in the columns for connecting the reinforcing bars inside the wall.
2. Set the reinforcing bars inside the wall.
3. Use plywood that is 1 cm thick, 1.2 m wide, and 3 m long with some stiffeners for the formworks. The cast in-situ process can be undertaken in three steps, with the first at is 1.20 m high, and the second and third at 0.90 m each.
4. Use a debonding agent such as used oil on the formworks so that they can be easily dismantled.
5. Properly mix the water, cement, and fine aggregate from crushed brick rubble to make the mortar, where the volumetric ratio of each material is 1:1.25:5. Pour the mortar into the formwork and then perform the compacting work, as shown in Figure 3.
6. The formwork can be dismantled after at least one day, as shown in Figure 4.
7. The second and third layers can then be added in the same manner.

Lessons learned

Compared with conventional methods that use brick layers to construct walls, the cast in-situ method using recycled brick rubble has several advantages.

1. The application of the recycled material reduces the costs of rubble cleanup. The cast in-situ process is easily performed and no special brick layer mason is required. Thus, the construction process can be performed quickly.



Figure 3. The mortar is mixed properly, poured into the prepared frame work, and compacted with a stick.



Figure 4. Frame works can be dismantled after one day.

2. Neither plaster nor finishing is required.
3. The environmental impact caused by large amounts of brick masonry wall rubble can be reduced.

Concluding remarks

From the above discussions the following conclusions and remarks can be made.

1. The recycling process can solve the problem of the large amount of brick masonry wall rubble.
2. Neither brick nor sand is required for the construction of the wall.
3. The cast in-situ process is easier and faster than the conventional method to construct the wall.
4. Neither plaster nor finishing is required for the wall.
5. For mass construction like in the reconstruction process, the cast in-situ method using recycled brick rubble is cheaper than that of conventional one.
6. The recycling process needs to be introduced in other region prior the occurrence of earthquake as alternative of conventional method, had a reconstruction process be required.

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2. Small Industry Revitalization Program in Kotagede

By *Ikaputra and Dyah Titisari*

Introduction

Improving the quality of Kotagede's Heritage District after the earthquake is not only about the "physical reconstruction" of tangible cultural heritage artifacts, but also of intangible heritage. The intangible cultural heritage of Kotagede Heritage District range from the production of

traditional food (*kipo, legomono*, etc.) and clothes (*sulam*), to craft making (gold, silver, copper, etc). Of all the forms of intangible cultural heritage, the craft home industry sustained the most severe economic impacts as a result of the earthquake. No orders-no buyers means no income for families struggling to survive after the earthquake. How can we provide support to sustain the economic lives of artisan families? Efforts to promote the economic revitalization of silversmith families in particular have been developed to sustain the intangible assets of Kotagede. Thus, to improve the sense of community belonging, social inclusion, and cultural identity, Gadjah Mada University and its partner Exxon Mobil developed a program called the Post-Earthquake Revitalization of Kotagede Crafts.

The Focus, target, and period of program implementation

This program focused on support to the low-income silversmithing families that were victims of the earthquake. The program introduced the "*Program Oder Produk Unggulan Kerajinan Perak*"—the Qualified Silver Craft Product Order. The objectives of this program were:

- A) To motivate low-income silversmiths to solve their own economic problems after the earthquake by working on an "order-based program"
- B) To simulate the relationship between "customer and craft worker" to improve the quality of silver craft products.
- C) To promote silver craft products to a wider market inside and beyond Kotagede.

The program was implemented for two years, from March 2007 to February 2009.

Collaborative Works to Revive the Post-Earthquake Kotagede Silver Craft Industry

The initiator and implementing organization of this program is Gadjah Mada University. It was supported by its key partner, US-based oil company Exxon Mobil. The program is locally supported by Lurah (Village Leader) of Jagalan, OPKP Kotagede (Organisasi Pelestari Kawasan Pusaka Kotagede), a local NGO for Kotagede Heritage District Preservation, and KP3Y (Koperasi Produksi Pengusaha Perak Yogyakarta), the Cooperative of Silver Works Producers in Yogyakarta. It is supported by Dinas Perindustrian DIY (Agency of Industry of Yogyakarta Province) at the provincial government level and with the National Agency for Export Development (BPEN, Badan Pengembangan Ekspor Nasional) at the national level.

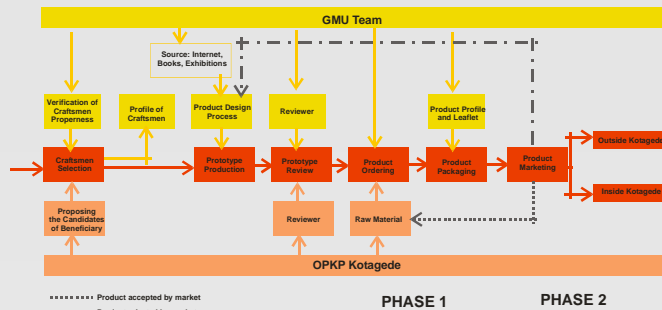
This program was implemented in two phases:

- A) Reviving small industries and promoting the best products of small industry through a partnership program.

This activity aimed to explore possibilities for reviving the business of Kotagede silversmiths, specifically for small scale workers who suffered financial losses after the

The plan of implementation is shown below:

1. Verification of Craftsmen Properness --> Verification of Craftsmen's Qualifications



The scheme for small industry reviving program.

Overall, only 40 were selected to be involved in this partnership program. They were selected based on a verification of their qualifications (as some candidates stopped working as silversmiths after the earthquake). The objective was preparation and elaboration of prototype silver craft designs, to improve silversmiths' skill levels, as well as to improve their silver craft design 'vocabulary.' The process of making a prototype was important because the result was indicative of the silversmith's skills (capacities and capabilities, speed and quality of the finished product). The quality of the prototypes was reviewed by experts for the design quality (art value, usefulness, market value, originality) and silversmithing skills (tidiness, design transformation, technical skill, and detailed design ability).

During the implementation agreements were reached regarding such issues as the role of OPKP in stabilizing the raw material price of silver by supplying the commodity, the development and sustainability of the partnership program, as well as UGM's commitment to support product marketing. The order of prototype production was based on recommended designs and the silversmiths' expertise. Each silversmith received orders valued at about Rp. 2,000,000.00 – Rp. 2,500,000.00. All the resulting products have been included in the catalogue of Kotagede silver products, which contains pictures, names or titles of products, product specifications (weight, materials), designer and silversmith names, as well as product prices. This catalogue has helped considerably with product promotion and marketing.

B) Marketing and promoting the best products of small Industry

Small-scale craftsmen in Kotagede have limited access to opportunities to promote and market their products. This phase included several activities aimed at marketing the products, including providing a space to be used as a collective showroom as well as participating in national and international exhibitions. The first step was the development of a collective showroom and gallery for Kotagede silver crafts.

To develop a brand, Kotagede silver crafts were marketed outside Kotagede. Silver craft products resulting from the partnership program were marketed in some outlets outside Kotagede as well as via an Internet website (<http://kotagedecrafts.multiply.com>). Some Kotagede craftsmen have attended various national and international exhibitions. These events include TexCraft Exhibition 2008 in Yogyakarta, JA New York Summer Show 2008 in New York (as part of a booth highlighting Indonesia), Surabaya International Jewelry Festival 2008 in Surabaya, Jogja Export Expo 2008 in Yogyakarta, and the Indonesia Jewel Expo 2008 in Jakarta. As a result, there were several transactions between representatives of the Kotagede silversmiths and national and international buyers.

Based on these achievements, there are several challenges to be addressed. Efforts must be made to improve the uniqueness and quality of design in order to compete with other products, and to strengthen product promotional efforts in Kotagede and beyond by providing and preparing locations for collective showrooms.



Craftsmen participate in national and international exhibitions.

Lessons learned

Overall, this program has made significant contributions to the economic revival of this small industry. The community appreciated the support provided by UGM and Exxon Mobil. The partnership program has been implemented for about two years and has had a positive impact on local silversmiths. They have been able to improve their skills, expand their design vocabulary, broaden their knowledge of marketing and promotion, and recover from their financial losses after the earthquake.

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