ARCHITECTURE TECHNOLOGY AND DISASTER RESILIENCE

Philippine Government Revised Standards for Housing and Construction in View of “New Normal”

A presentation by
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United Architects of the Philippines (UAP) National President
Department Manager, Housing Technology Development Office
National Housing Authority

For the CREBA 8th Monthly Business Meeting

Hotel Intercontinental, Makati City
28 August 2014
OUTLINE OF PRESENTATION

• The NHA2014 Production Target and Accomplishments as of EO July 2014
• Background on Typhoon Yolanda
• Consultation with Stakeholders after Typhoon Yolanda
• Housing Design: 22 m² Row House Model with (Loftable Type) developed as a disaster-resilient housing
• Accreditation of Innovative Technologies
• Procurement of Housing Units
  – Terms of Reference
NHA HOUSING PRODUCTION TARGET 2014
<table>
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<th>PROGRAM TYPE</th>
<th>TARGETS</th>
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<td>102,293</td>
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Accomplishment report on regular housing production as of July 30, 2014 for SLB, MMO, VMO and NCL
Accomplishment report on regular housing production as of June 30, 2014 for NCR
Background on Typhoon Haiyan (known in the Philippines as Typhoon Yolanda)

- Typhoon Yolanda was one of the strongest tropical cyclones ever recorded, which devastated portions of South East Asia, particularly the Philippines, on November 8, 2013.

- Deadliest Philippine typhoon on record, killing at least 6,300 in the country.

- Strongest storm record at landfall, and unofficially the strongest typhoon in terms of wind speed.

Source: http://en.wikipedia.org/wiki/Typhoon_Yolanda
Background on Typhoon Haiyan (known in the Philippines as Typhoon Yolanda)

• The typhoon caused catastrophic damage in Eastern Visayas, with many buildings destroyed. Some areas were completely washed away.

• Although wind speeds were extreme, the major cause of damage and loss of life appears to have been storm surge.

The devastation in Guian, Samar taken from Philippine Air Force helicopter. (AP Photo/Bullit Marquez)
Background on Typhoon Haiyan (known in the Philippines as Typhoon Yolanda)

- On November 15 and 22, 2013, National Housing Authority (NHA) conducted a design consultation with major stakeholders to determine parameters for disaster resiliency for housing.

- Participants included key shelter agencies, professional groups, academe, private practitioners, non-government organizations, etc.

- Discussion points centered on four parts: site selection and planning, temporary facilities, permanent housing and land development standards.

- Continuing dialogue are being made to come up with best housing solutions.
**Background on Typhoon Haiyan (known in the Philippines as Typhoon Yolanda)**

**Disaster Resilient Housing Structural Design Standards**

<table>
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<tr>
<th>Design Parameter</th>
<th>One-Storey</th>
<th>Two-Storey</th>
<th>3-Storeys or More</th>
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<td>Wind Load</td>
<td>250 KPH</td>
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<td>3,000 PSI</td>
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<td>Soil Bearing Capacity</td>
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<tr>
<td>Fire Resistance</td>
<td>2 HOURS</td>
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This is one of the outputs generated from the consultation meetings of the NHA TWG on Disaster-Resilient Housing in November to December 2013.
Background on Typhoon Haiyan (known in the Philippines as Typhoon Yolanda)

Other Outputs from the Consultation Workshop

Considerations for Site Selection:

• Topography and elevation from the sea level as priority criteria/consideration
  • MGB clearance
  • Hydro-geologic analysis
  • Sub-surface conditions
  • CLUP data

• Use 100-year flood data
  • Get information from Manila Observatory

• Buildable Areas from the Coastline
  • Final boundary delineation of the “no build” and “build” zones shall be based on DENR and DOST recommendations
Background on Typhoon Haiyan (known in the Philippines as Typhoon Yolanda)

OTHER OUTPUTS FROM THE CONSULTATION WORKSHOP

CONSIDERATIONS FOR SITE SELECTION:

• Re-development of the shoreline into
  • Mangrove forest, agri-forestry
  • Trees as buffer
  • Relocation of fisherfolks – but provide transitory facilities
  • If applicable, perforated sea wall

• Identify applicable uses for the coastal area
  • No more human settlements
  • Agricultural, tourism
Background on Typhoon Haiyan (known in the Philippines as Typhoon Yolanda)

OTHER OUTPUTS FROM THE CONSULTATION WORKSHOP

CONSIDERATIONS FOR SITE SELECTION:

- Site planning principles
  - Clustering of houses to mitigate wind impact
  - Specify standards of settlements for upland, coastal, lowland areas both for site development and vertical development
  - Look into best practices from other countries on resiliency and climate change adaptation

- Review of laws pertaining to settlements
  - Recommend proposals for a typhoon/earthquake code on specific areas that are disaster prone/or in extreme environments

Proposed site development with clustering of mix of resilient house types by a private architect
Background on Typhoon Haiyan (known in the Philippines as Typhoon Yolanda)

OTHER OUTPUTS FROM THE CONSULTATION WORKSHOP

SOME HOUSING DESIGN OPTIONS:

• ROWHOUSE/DUPLEX with Loft (Enhanced NHA Resettlement)

• TWO-THREE STOREY LOW-RISE BUILDING to serve as evacuation center/typhoon shelter during storm surges, also to serve as buffer on sites at lowland areas

• COMMUNITY FACILITIES such as Multi-Purpose Centers, Day Care/Health Centers and Schools to Redesign to serve as Evacuation Centers during calamities with Emergency Storage Rooms

• EMERGENCY STORAGE ROOM PROVISIONS: Food, medicine, water and emergency power supply and communications (like bomb shelter on the top floor)
The PARR or Presidential Assistant for Rehabilitation and Recovery

MANDATE
By virtue of the Philippine President Memorandum Order No. 62, an assistant is appointed with a Cabinet rank whose main task is to “act as the over-all manager and coordinator of rehabilitation, recovery and reconstruction efforts of government departments, agencies and instrumentalities in the affected areas”.

The PARR or Presidential Assistant for Rehabilitation and Recovery

“BUILD BACK BETTER” Principle

The Cluster Action Plans of each of the 5 Clusters formed under PARR (Infrastructure, Social Services, Resettlement, Support Services, and Livelihood) shall be guided by the build back better principle which focus on long-term, sustainable efforts to reduce vulnerabilities and strengthen capacities to cope with future hazard events.

- Build Typhoon Resilient Infrastructure (250kph)
- Explore Sustainable Industries/SMEs, Typhoon Resilient Crops/Cash Crops, End-to-end value chain
- Typhoon Resilient Communities/Resettlement Sites
- Social Protection mechanisms in affected areas
The PARR or Presidential Assistant for Rehabilitation and Recovery

- Each province is requested to come up with their rehabilitation plans together with the 171 affected municipalities.

- Plans should contain details of the following:
  - LGU Plans and Programs
  - Private Sector Projects
  - International Organizations/Aid Agency Projects
  - Civil Society Organizations Projects
  - Comprehensive Land Use Plans

- Plans will be included in the Comprehensive Yolanda Rehabilitation and Recovery Plan.

- OPARR will assist Local Government Units in crafting provincial rehabilitation plans (architects, engineers, planners, livelihood experts).
22 m² DISASTER RESILIENT ROW HOUSE MODEL
(Loftable or with 11 m² Loft)

LOT SIZE: 40 m²
(10.00m x 4.00m)

BUILDING FOOTPRINT: 22 m²
(5.50m x 4.00m)

TOTAL FLOOR AREA: 33 m²
(Ground Floor and Loft)
22 m² DISASTER RESILIENT ROW HOUSE MODEL
(Loftable or with 11 m² Loft)

PROPOSED LOT SIZE:
40 m² (10.00m x 4.00m)
22 m² DISASTER RESILIENT ROW HOUSE MODEL

GROUND FLOOR AREA
22 sq. m. (5.50m x 4.00m)
22 m² DISASTER RESILIENT ROW HOUSE MODEL

LOFT FLOOR AREA
11 sq. m. (2.75m x 4.00m)
22 m² DISASTER RESILIENT ROW HOUSE MODEL

**LOFT** (SLEEPING AREA)

- APEX OF FIREWALL +5.60 m
- APEX OF ROOF +5.50 m
- TOP OF LOWER PART OF INCLINED ROOF BEAM RAFTER +4.30 m
- LOFT FINISH FLOOR LINE +2.20 m
- BOTTOM OF BEAM (B-1) +2.33 m
- G/F FINISH FLOOR LINE +0.20 m
- G/F FINISH GROUND LINE +0.00 m

**LIVING/DINING AREA**

- 150mm thk CHB FIREWALL WITH PLAIN CEMENT PLASTERED FINISH
- 50mm x 50mm VERTICAL & HORIZONTAL WOODEN SUPPORT
- 25mm x 50mm WOODEN BALUSTERS SPACED AT 0.10 M O.C.
- ¼" thk. FLYWOOD 5/DINGS
- 100mm thk CHB WALL (TOOL JOINT FINISH)
22 m² DISASTER RESILIENT ROW HOUSE MODEL
22 m² DISASTER RESILIENT ROW HOUSE MODEL

FRONT ELEVATION

150mm thk CHB FIREWALL WITH PLAIN CEMENT PLASTERED FINISH

0.40mm CORRUGATED G.I. ROOFING SHEETS

300mm x 300mm x 75mm CONCRETE GUTTER WITH WATERPROOFING (SEE DETAIL)

100mm x 200mm x 200mm LOUVER BLOCKS

GLASS JALOUSIE WINDOW ON ALUM. FRAME (1.176m x 1.20m) with MARINE PLYWOOD TYPHOON SHUTTERS (SEE DETAIL)

FRONT MAIN DOOR (PANEL TYPE)

PLAIN CEMENT PLASTER FINISH

1.20 x 0.30 x 0.10 MT5 CONCRETE STEP
22 m² DISASTER RESILIENT ROW HOUSE MODEL

150mm thk CHB FIREWALL WITH PLAIN CEMENT PLASTERED FINISH
0.40mm CORRUGATED G.I. ROOFING SHEETS
300mm x 300mm x 75mm CONCRETE GUTTER WITH WATERPROOFING (SEE DETAIL)
GLASS JALOUSIE WINDOW ON ALUM. FRAME (0.556m x 1.20m)
PLAIN CEMENT PLASTER FINISH
GLASS JALOUSIE WINDOW ON ALUM. FRAME (0.378m x 0.50m)
GLASS JALOUSIE WINDOW ON ALUM. FRAME (1.00m x 0.60m)
22 m² DISASTER RESILIENT ROW HOUSE MODEL

FRONT ELEVATION

TYPHOON SHUTTER DETAILS

1.20

1.20

1.25

1.20

1.20

SLIDING

3/4" thk. MARINE PLYWOOD WITH WOOD EDGING AT ALL ENDS

GGLASS JALOUSIE WINDOWS (1.20m x 1.20m)
ON ALUMINUM FRAME

1" X 1" X 3/8" ANGLE BAR FRAME, DOWELLED TO CHB WALL

1" X 3/8" FLAT BAR

BARREL BOLT
22 m² DISASTER RESILIENT ROW HOUSE MODEL

TYPHOON SHUTTER DETAILS

SECTION

SIDE

ELEVATION

INTERIOR SIDE

INTERIOR SIDE

EXTERIOR SIDE

EXTERIOR SIDE

1" FLAT BAR
PORTLAND CEMENT MORTAR
1" x 1" x 3/8' ANGLE BAR, FULLY WELDED TO EXTENDED FLAT BARS EMBEDDED IN CHB WALL
3/4" birch MARINE PLYWOOD (PAINTED FINISH)
GLASS JALOUSIE WINDOWS ON ALUMINUM FRAME

1" FLAT BAR
PORTLAND CEMENT MORTAR
1" x 1" x 3/8' ANGLE BAR, FULLY WELDED TO EXTENDED FLAT BARS EMBEDDED IN CHB WALL
1" x 1" x 3/8' ANGLE BAR
GLASS JALOUSIE WINDOWS ON ALUMINUM FRAME

1" FLAT BAR
PORTLAND CEMENT MORTAR
1" x 1" x 3/8' ANGLE BAR, FULLY WELDED TO EXTENDED FLAT BARS EMBEDDED IN CHB WALL
3/4" birch MARINE PLYWOOD (PAINTED FINISH)
GLASS JALOUSIE WINDOWS ON ALUMINUM FRAME

1" FLAT BAR
22 m² DISASTER RESILIENT ROW HOUSE MODEL

EXTERIOR SIDE

INTERIOR SIDE

100mm thk CHB WALL

3/4" thk. MARINE PLYWOOD (PAINTED FINISH)
1" X 1" X 3/8" ANGLE BAR, FULLY WELDED TO EXTENDED FLAT BARS EMBEDDED IN CHB WALL

GLASS JALOUSIE WINDOWS ON ALUMINUM FRAME

PORTLAND CEMENT MORTAR

1" FLAT BAR

WINDOW SILL DETAILS
TYPHOON SHUTTER DETAILS
22 m² DISASTER RESILIENT ROW HOUSE MODEL

CONCRETE GUTTER DETAIL

5mm Ø J-BOLT

TOPPING MORTAR
WATERPROOFING
LEVELLING MORTAR

1.0mm Ø BAR @ 0.40 M.O.C.

12 MM X 12 MM DRIP MOLD

0.075 0.225

0.075 0.225

50 MM. Ø DOWNSPOUT

150 X 65 X 20 X 2.0mm LIP CHANNEL PURLINS WITH 50mm EMBEDMENT ON INCLINED R.C. BEAM @ 0.70m ON CENTER
22 m² DISASTER RESILIENT ROW HOUSE MODEL

FIREWALL

INCLINED ROOF BEAM

5mm Ø J-BOLT

0.40mm thk G.I. ROOFING

150 X 65 X 20 X 2.0mm LIP CHANNEL PURLINS WITH 50mm EMBEDMENT ON INCLINED R.C. BEAM, @ 0.70m O.C.
22 m² DISASTER RESILIENT ROW HOUSE MODEL

ROOFING SHEETS OVERLAP DETAIL

5mm Ø J-BOLT

0.30 OVERLAPPING OF ROOFING SHEETS

0.40mm CORR.
G.1 ROOFING

LIP CHANEL PURLIN

0.70

0.70
## OUTLINE SPECIFICATIONS

**STRUCTURAL**
- RC BEAM, COLUMN & FOOTING
- RC WALL FOOTING
- RC FLOOR SLAB, 100MM thk. WITH 10mmØ RSB @ 400mm BOTHWAYS

**WALLS**
- 150mm thk. CHB (FIREWALL)
- 100mm thk. CHB, PLASTER FINISH (EXTERIOR)
- 100mm thk. CHB, TOOL JOINT FINISH (INTERIOR)

**ROOFING**
- 0.404mm thk CORR. G.I. ROOFING SHEETS at 8’
- 2.0mm X 50mm X 150mm C-PURLINS WITH 12mmØ SAGROD @ MIDPOINT

**DOORS (OPTIONAL)**
- 1 – FLUSH DOOR TYPE
- 1 – PANEL DOOR TYPE
- 1 – PVC DOOR TYPE

**WINDOWS (OPTIONAL)**
- ALUMINUM JALOUSIE TYPE with TYPHOON SHUTTERS
- 4” x 8” x 8” CONCRETE LOUVER BLOCKS

**FINISHES**
- EXTERIOR WALL – PLASTERED AND PAINTED FINISH
- T & B FLOOR – 200mm X 200mm FLOOR TILES

**PLUMBING**
- WATER LINE – uPVC PIPES
- SANITARY & DRAINAGE LINES – PVC PIPES
- TOILET BOWL – PAIL FLUSH TYPE LAVATORY

**SEPTIC TANK**
- PURIFYING POLYTHYLENE SEPTIC TANK
22 m² DISASTER RESILIENT ROW HOUSE MODEL

DPWH COMMENTS AND RECOMMENDATIONS

CHANGE ROOFING SCREWS FROM TEKSCREW TO J-BOLT

STRUCTURAL DRAWINGS
22 m² DISASTER RESILIENT ROW HOUSE MODEL

INCREASE FLOOR TO FLOOR HEIGHT TO ACCOMMODATE LARGER FLOOR JOIST AND BEAM (FROM 5.30M TO 5.50M)

REVISED STAIR RISER HEIGHT TO ACCOMMODATE LARGER FLOOR JOIST AND BEAM

ARCHITECTURAL DRAWINGS

DPWH COMMENTS AND RECOMMENDATIONS
22 m² DISASTER RESILIENT ROW HOUSE MODEL

Photos of completed units in Tanauan, Leyte
3-Storey Building Design for Typhoon Yolanda Victims

Design option for urbanizing or for highly urbanized areas.
3-Storey Building Design for Typhoon Yolanda Victims
ACCREDITATION OF INNOVATIVE TECHNOLOGIES FOR HOUSING

AITECH History

In July 1993, agencies agreed for the reactivation (of an inter-agency committee created earlier in 1990) of an accreditation system for new technologies. It was in early 1994 that the reactivation is formally formed by and between 11 government agencies, now named the Accreditation of Innovative Technologies for Housing or AITECH.

Member Agencies: Housing and Urban Development Coordinating Council (HUDCC); Department of Science and Technology (DOST); National Housing Authority (NHA); Home Guarantee Corporation (HGC); Home Development Mutual Fund (HDMF); National Home Mortgage Finance Corporation (NHMFC); Construction Industry Authority of the Philippines (CIAP); Housing and Land Use Regulatory Board (HLURB); University of the Philippines - Bureau of Research and Standards (UP-BRS); Department of Public Works and Highways (DPWH); Department of Trade and Industry (DTI)
ACCREDITATION OF INNOVATIVE TECHNOLOGIES FOR HOUSING

OBJECTIVES

• To assist producers of innovative technologies in securing acceptance of their products or systems in the market as well as to make these technologies acceptable for funding under the government’s housing loan program.

• To encourage and promote the use of innovative technologies as an alternative to traditional housing construction system.
ACCREDITATION OF INNOVATIVE TECHNOLOGIES FOR HOUSING

CRITERIA FOR ACCREDITATION

• Structural Evaluation
• Cost effectiveness based on the resulting construction costs as compared with housing unit built with conventional building materials/systems.
• Compliance to housing standards based on BP 220, PD 957 and the National Building Code.
• Appraisal of housing units using the technology for mortgage acceptance by funding institutions.
• Physical properties and structural soundness of technologies in relation to health considerations and suitability to local climatic and topographic conditions.
• Local availability of raw materials for the production/ use of particular technologies.
• Consistency of required quality in mass production.
ACCREDITATION OF INNOVATIVE TECHNOLOGIES FOR HOUSING

ADVANTAGES IN USING INNOVATIVE MATERIALS/SYSTEMS

• Lower cost of construction
• Reduced labor and construction time
• Easier construction method
• Minimized material wastage
ACCRREDITED TECHNOLOGIES
LOW RISE TECHNOLOGIES

• 1.1 MEGAWIDE CONST. CORP.
• 1.2 PHINMA PROPERTY HOLDING CORP.
• 1.3 SOLID GROUP TECH. CORP.
• 1.4 E. FLORENTINO³ + ASSOCIATES
• 1.5 MEGAWIDE CONST. CORP.
• 1.6 PANAFLEX INC.
• 1.7 JOSE CRIS BUILDERS
• 1.8 FORMING ACCESS & SUPPORT INC.
ONE TO TWO STOREYS TECHNOLOGIES

• 2.1 AVIA CONST. & DEV. CORP.
• 2.2 CAVITE FORM MODULE
• 2.3 KIWANG STEEL CO., LTD
  AUBURN POWER TECH., INC.
• 2.4 POSHOME GLOBAL CORP.
• 2.5 PROPERTY COMPANY OF FRIENDS
• 2.6 RESPONSE RESOLVE RESOURCES, PHILS.
• 2.7 VASQUEZ BUILDING SYSTEM CORP.
• 2.8 STERLING CONST. & DEV. CORP.
• 2.9 NEDSTEEL CONST. & DEV. CORP.
• 2.10 SPEEDSTEEL DEV. CORP.
• 2.11 REALM HomeBuilders
• 2.12 LIVE IN QUARTERS STEEL CORP.
Mammut System has redefined standards in wall formworks consisting of versatile panels with complete accessories. It is crane dependent and its frames are made of closed steel profiles with special coating. It has an all-around grooves and assembly lock that guarantees a stepless, tight and perfectly aligned panel connection. It is ideal for very high and large structures with concrete load capacity of up to 100kn/m². It brings a superior concrete finish with its all-plastic 100% wood free facing and the symmetrical tie holes and joint pattern.
4. WALL PANEL TECHNOLOGIES

• 4.1 JEA STEEL INDUSTRIES, INC.
• 4.2 MCM ECO MANAGEMENT CORP.
• 4.3 SRC INT'L PANEL SYSTEM, INC.
• 4.4 PHILIPPINE ECOPANEL INC.
• 4.5 JBC INNOTECH CORPORATION
• 4.6 UNION GALVASTEEL CORP.
• 4.7 FAST WALL SYSTEMS PHILS., INC.
• 4.8 MACRO INDUSTRIAL PACKAGING PRODUCTS CORP.
5. FLOOR & ROOF DECK SYSTEM

- 5.1 JACKBILT INDUSTRIES, INC.
- 5.2 UNION GALVASTEEL CORP.
- 5.3 CONCRETE VENTURES GROUP, INC.
- 5.4 STONEWORKS SPECIALIST INT’L CORPORATION
6. SEPTIC TANKS

• 6.1 PHILKOR PLASTIC CORP. (formerly KOTEC)
• 6.2 WEIDA PHILIPPINES, INC.
• 6.3 STONEWORKS SPECIALIST INT‘L CORPORATION
• 6.4 YOONNI GREENTECH CORP.
7. PAINT

7.1 FIRST ASIAN BRIGHT STAR MARKETING CORP.

TECHNOLOGY: Contractor Grade Flat White Latex - AB 500 and Premium White Flat Latex

Eggshell Finish are USA manufactured household paint suitable for exterior and interior. It is water based, non-flammable, non-toxic, odorless, and lead-free. The paints are quick drying with stain resistant formulated and mildew resistant coating. Flat latex has a coverage of 28.37 sq.m. per gallon.
8. SOIL STABILIZER

8.1 ISA GREENPATH ENTERPRISES, INC.

TECHNOLOGY: Eco Base 300 Soil Stabilizer

Eco Base 300 Soil Stabilizer are liquid stabilizers designed to improve the structure/integrity of road construction where soil becomes chemically bonded making it harder and water resistant. The result is a road that exhibit high sheer strength to improve soil bearing capacity that is weather-proof, easily workable and can be compacted to a better particle cohesion by equipment and traffic.
9. FENCE

9.1 VASQUEZ BUILDING SYSTEM CORP.

TECHNOLOGY: Vazbilt Prefab Fences

Vazbilt Prefab Fences is a modular concrete fence system using interlocking wall panels, columns and tie beams designed with versatility to appear while providing strength and security that gives a warm, aesthetic and clean well beyond CHB. With finished texture on both sides, the tongue and groove system has a quick, clean and efficient installation even during rainy days. Its assembly is clean unlike messy hollow block laying and plastering.
10. WATER STORAGE TANK

10.1 WEIDA PHILIPPINES, INC.

TECHNOLOGY: Weida Polystor Water Storage Tank

The polyethylene (PE) upright storage tank is a premium quality tank produced with the latest technology to meet a wide range of water storage requirement and applications. It is manufactured from reputable international producers. It is strong, seamless, leak proof, and weather resistant. Polystor polyethylene tanks are specially formulated with UV stabilizer for long term durability under direct sunlight. It is lightweight for easy handling food and potable water compliant, and can store all kinds of water, including corrosive and mineralized water. It has an extensive range which caters to both household as well as commercial, industrial use.
11. DOOR

11.1 NOELLOUISSE CUSTOM FURNITURE AND FITS-OUT CORP.

TECHNOLOGY: Titan Door

Titan Door is the first in the country, a fiber cement panel with metal frame and metal jamb. The doors are classified into three levels: Level 1-1-3/4” standard duty; level 2- 1-1-3/4” heavy duty; and Level 3- 1-1-3/4” extra heavy duty
TERMS OF REFERENCE
(Salient Features)

FOR THE PROCUREMENT OF FULLY-DEVELOPED LOTS AND COMPLETED HOUSING UNITS UNDER THE NHA’S YOLANDA PERMANENT HOUSING PROGRAM
# TABLE OF CONTENTS

1. General Information  
2. The NHA’s Yolanda Permanent Housing Program (NHA-YPHP)  
3. Submission of Letter of Intent and Proposals  
4. Submission of Eligible Documents and Shortlisting of Contractor  
5. Total Number of Housing Units Required
<table>
<thead>
<tr>
<th>Table of Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>6. Parameters/ Specifications</td>
</tr>
<tr>
<td>7. Terms and Conditions of the Contract/ Agreement between NHA and Contractor</td>
</tr>
<tr>
<td>8. Submission of Proposals</td>
</tr>
<tr>
<td>9. Other Requirements</td>
</tr>
<tr>
<td>10. Evaluation of Proposals</td>
</tr>
</tbody>
</table>
1. GENERAL INFORMATION

NHA YOLANDA PERMANENT HOUSING PERMANENT HOUSING PROGRAM
1. GENERAL INFORMATION

- Guide for interested CONTRACTORS
- Publication of NOTICES thru:
  - Once in 2 newspapers of general nationwide circulation
  - Posted at PhilGEPS Website
  - NHA Website
  - In NHA, within designated areas
1. GENERAL INFORMATION

- Advise to Contractor to:
  - Fully examine the TOR
  - Cost of proposal c/o Contractor
  - NHA reserves right to request additional documents
  - NHA reserves right to amend TOR prior to deadline of submission of proposals
  - Call to Pre-Bid Conference
  - NHA reserves right to reject proposals
2. THE NHA YOLANDA PERMANENT HOUSING PROGRAM (NHA-YPHP)
2. NHA YOLANDA PERMANENT HOUSING PROGRAM (NHA-YPHP)

- Rational to provide housing to families affected by Typhoon “Yolanda” in Visayas and Palawan.
- Proclamation No, 682 dated November 11, 2013, “declaring a state of national calamity . . . . caused by Typhoon “Yolanda” last November 08, 2013”
- GBBB Resolution No. 34-2013 dated November 14, 2013, granting all procuring entities the authority to enter into Negotiated Procurement under Sec. 53.2 (Emergency Cases) of IRR of RA9184, as amended
3. SUBMISSION OF LETTER OF INTENT AND PROPOSALS

NHA YOLANDA PERMANENT HOUSING PERMANENT HOUSING PROGRAM
3. SUBMISSION OF LETTER OF INTENT AND PROPOSALS

• Letter of Intent (LOI) to be submitted together with application for pre-qualification to include details of proposed site, within 14 calendar days to the NHA BAC after date of publication of Invitation to Submit Offers/Proposals
4. SUBMISSION OF ELIGIBILITY DOCUMENTS AND SHORTLISTING OF CONTRACTOR

NHA YOLANDA PERMANENT HOUSING PERMANENT HOUSING PROGRAM
4. SUBMISSION OF ELIGIBILITY DOCUMENTS AND SHORTLISTING OF CONTRACTOR

- ANNEX “A” GUIDELINES FOR THE SUBMISSION OF ELIGIBILITY DOCUMENTS OR ACCREDITATION OF CONTRACTORS

- Procedures for shortlisting of Contractors

QUALIFICATIONS:
- Duly licensed Filipino citizen/sole proprietor
- Partnerships organized under Philippine law (75% outstanding stocks owned by Filipino citizens)
- Corporations organized under Philippine law (75% outstanding stocks owned by Filipino citizens)
QUALIFICATIONS (Continued):

– Cooperatives organized under Philippine law (75% outstanding stocks owned by Filipino citizens)
– Persons forming themselves into joint venture partners

MUST PASS THE FOLLOWING CRITERIA

– Registered with NHA (issued Contractor’s Registration Certificate)
– Signified intention to participate in negotiated procurement per IRR of RA9184
4. SUBMISSION OF ELIGIBILITY DOCUMENTS AND SHORTLISTING OF CONTRACTOR

BASIC QUALIFICATION

– Registered with SEC, DTI or CDA with authority to conduct business

FINANCIAL CAPABILITY

– Meet financial contracting capacity to undertake project based on the following:

\[
NFCC = \{(\text{current asset minus current liabilities}) (K) \text{ minus the value of all outstanding or uncompleted portions of the projects under on-going contracts, including awarded contracts yet to be started}\}
\]
4. **SUBMISSION OF ELIGIBILITY DOCUMENTS AND SHORTLISTING OF CONTRACTOR**

**EXPERIENCE**
- Must have completed a single contract similar to the contract to be bid and whose value must be at least 50% of the ABC of the project

**TRACK RECORD**
- Must have constructed at least **300 house and lot packages**

**PCAB LICENSE**
- Possess valid PCAB License and Registration
- Those without PCAB License: Enter JVA or Consortium with PCAB Licensed Contactors
4. **SUBMISSION OF ELIGIBILITY DOCUMENTS AND SHORTLISTING OF CONTRACTOR**

**KEY TECHNICAL PERSONNEL AND EQUIPMENT**

- Must have sufficient experience in relevant aspect of schemes similar or related to the project

**BACKGROUND AND PERFORMANCE CHECK**

- NHA BAC to ensure thorough background investigation undertaken on Contractor

**CONTRACTORS WHO SHALL MEET THE ABOVE CRITERIA SHALL BE INCLUDED IN THE SHORLIST OF BIDDERS**
5. **TOTAL NO. OF HOUSING UNITS REQUIRED**

NHA YOLANDA PERMANENT HOUSING PERMANENT HOUSING PROGRAM
5. **TOTAL NO. OF HOUSING UNITS REQUIRED**

- Maximum of 1,000 units or as may be determined by the NHA-YPHP on the basis of housing need as approved by OPARR
6. PARAMETERS/ SPECIFICATIONS

NHA YOLANDA PERMANENT HOUSING PERMANENT HOUSING PROGRAM
6. PARAMETERS/ SPECIFICATIONS

6.1 SITE/ LOCATION

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>Within Cities/ Municipalities affected by Super Typhoon “Yolanda” as considered by NHA-YPHP to be in “Safe Zones”</td>
</tr>
<tr>
<td>Zoning/ Classification</td>
<td>Residential, upon utilization</td>
</tr>
<tr>
<td>Topography</td>
<td>Suitable for residential development. Slope should not exceed 20%</td>
</tr>
<tr>
<td>Access to Property</td>
<td>With R.O.W. corresponding to existing planning standards</td>
</tr>
<tr>
<td>Facilities</td>
<td>The housing projects must provide areas for community facilities; existence of planned industrial/ commercial areas shall also be given premium</td>
</tr>
<tr>
<td>Utilities</td>
<td></td>
</tr>
<tr>
<td>• Water</td>
<td>Water distribution system shall be in place</td>
</tr>
<tr>
<td>• Power</td>
<td>Poles, wires/cables to be installed within the site</td>
</tr>
</tbody>
</table>
## 6. PARAMETERS/ SPECIFICATIONS

### 6.2 LEVEL OF DEVELOPMENT OF CIVIL WORKS

<table>
<thead>
<tr>
<th>COMPONENTS</th>
<th>PARAMETERS SPECIFICATION</th>
</tr>
</thead>
</table>
| I. ROAD PAVEMENT (Based on BP220) | A. Major Roads (10 Meter wide min. R.O.W.)  
B. Minor Roads (8 Meter wide min./ EVA 6.50 Meter R.O.W.)  
C. Alleys (3 Meter wide R.O.W.)  
D. Footpaths (2 meter wide R.O.W.)  
E. Sidewalks (1.20 meter wide R.O.W.) |
| II. DRAINAGE SYSTEM | • Concrete combination of underground RCCP’s uppertenances and open-lined canal with drainage outfall |
| III. SEWERAGE | • Individual Septic Tank/ Vault |
### 6. PARAMETERS/ SPECIFICATIONS

<p>| | |</p>
<table>
<thead>
<tr>
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<th></th>
</tr>
</thead>
</table>
| **6.3 LAND OWNERSHIP** | • With clean Title  
  • No illegal occupants/ structures upon utilization |
| **6.4 MINIMUM LAND AREA** | • As may be determined by NHA-YPHP |
| **6.5 NO. OF HOUSING UNITS** | • Maximum of 1,000 units or as may be determined by NHA-YPHP (Based on OPARR Housing Need) |
| **6.6 MINIMUM LOT SIZE** | • 40 square meters |
| **6.7 MIN. HOUSE DESIGN STANDARDS/ SPECS.** |   |
| House Typology | • Loftable rowhouse (Floor to rafter height: 5 to 5.50 meters) |
| Min. Floor Area/ Footprint | • 22 square meters for Loftable Resilient Housing Design |
### 6. PARAMETERS/ SPECIFICATIONS

<table>
<thead>
<tr>
<th>Structural Design Standards 9 (APPROVED BY DPWH)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Wind Load</strong></td>
</tr>
<tr>
<td>• 250 kph</td>
</tr>
<tr>
<td><strong>Strength of Wall and Super Structure</strong></td>
</tr>
<tr>
<td>• 3,000 psi</td>
</tr>
<tr>
<td><strong>Soil Bearing Capacity</strong></td>
</tr>
<tr>
<td>• 95kpa</td>
</tr>
<tr>
<td><strong>Seismic Load</strong></td>
</tr>
<tr>
<td>• Zone 4</td>
</tr>
<tr>
<td><strong>Loadings</strong></td>
</tr>
<tr>
<td>• 50psf</td>
</tr>
<tr>
<td><strong>Fire Resistance</strong></td>
</tr>
<tr>
<td>• 2 hours</td>
</tr>
<tr>
<td><strong>6.8 PRICE PER UNIT</strong></td>
</tr>
<tr>
<td>• Php290,000 per unit</td>
</tr>
</tbody>
</table>
7. TERMS AND CONDITIONS OF CONTRACT/ AGREEMENT BETWEEN NHA AND CONTRACTOR

NHA YOLANDA PERMANENT HOUSING PERMANENT HOUSING PROGRAM
### 7. TERMS AND CONDITIONS OF CONTRACT/AGREEMENT BETWEEN NHA AND CONTRACTOR

#### 7.1 TITLE OF PROPERTY
- Transferred in favor of NHA through Deed of Absolute Sale (DOA) upon signing of Contract of Agreement
- Notice to proceed to be issued only upon transfer of title in NHA’s favor (original copy in NHA’s custody)

#### 7.2 ROLES AND RESPONSIBILITIES

<table>
<thead>
<tr>
<th>CONTRACTOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Deliver developed sites and completed housing per approved plan</td>
</tr>
<tr>
<td>• Undertake repair works on housing units and land development found defective or below specs</td>
</tr>
<tr>
<td>• Warrant complete, satisfactory and faithful performance of all works</td>
</tr>
<tr>
<td>• Warrant issuance of TCT by concerned Register of Deed</td>
</tr>
</tbody>
</table>
7. TERMS AND CONDITIONS OF CONTRACT/AGREEMENT BETWEEN NHA AND CONTRACTOR

| CONTRACTOR | • Ensure maintenance, security and upkeep of housing units until such time that these are occupied by NHA  
|           | • Maintain at its own account all housing project/subdivision facilities, until its turnover to concerned authorities  
|           | • Ensure extension and installation of electrical and water facilities to serve housing units within the project area  
|           | • Submit as-built plans and final quantification to NHA  
|           | • Secure occupancy permit  
|           | • Secure all necessary permits/licenses/clearances (e.g., Development Permit, Building Permit, ECC, etc.) |
### 7. TERMS AND CONDITIONS OF CONTRACT/AGREEMENT BETWEEN NHA AND CONTRACTOR

#### 7.2 ROLES AND RESPONSIBILITIES (Cont.)

<table>
<thead>
<tr>
<th>CONTRACTOR</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Secure Performance Security</td>
</tr>
<tr>
<td></td>
<td>• Execute warranty that submitted plans, design and specifications conform/ comply with pertinent national laws and regulations</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>NHA</td>
<td>• Review and approve all subdivision plans, architectural and engineering plans, designs, estimates, etc.</td>
</tr>
<tr>
<td></td>
<td>• Create an Evaluation Committee to undertake evaluation of offered sites</td>
</tr>
<tr>
<td></td>
<td>• Create a Committee of Inspection and Acceptance</td>
</tr>
<tr>
<td></td>
<td>• NHA Project Manager to undertake inspection of fully-serviced lots with completed housing units, including facilities and appurtenances; effect turn-over of project to LGUs</td>
</tr>
</tbody>
</table>
## 7. TERMS AND CONDITIONS OF CONTRACT/AGREEMENT BETWEEN NHA AND CONTRACTOR

### 7.2 ROLES AND RESPONSIBILITIES (Cont.)

| NHA | • Reject housing unit not found acceptable  
|     | • Ensure fully developed lots and housing units and other uppertenant works have been satisfactorily constructed  
|     | • Ensure release of 10% retention upon approval of completed works |
## 7. TERMS AND CONDITIONS OF CONTRACT/AGREEMENT BETWEEN NHA AND CONTRACTOR

### 7.3 ADVANCE PAYMENT

- Upon written request on contractor by C, NHA to make advanced payment of 15% of total contract price.
- Advanced payment to be given upon acceptance by NHA from Contractor of standby letter of credit from reputable commercial bank.
- Advance payment to be repaid by Contractor per progress billing.
- Contractor may reduce standby letter of credit by amount refunded by Monthly Certificates in the advanced payment.

### 7.4 TERMS OF PAYMENT

- Completed developed lots: 60% of total land development cost.
- Payment above 60% may be allowed provided 10% of the total housing units have been constructed. Succeeding payments to be based on actual number of developed lots.
- Payment for completed housing units excluding removable housing components may be allowed. Deed of Undertaking to be executed for components not yet installed. Removable components to be installed prior to occupancy of housing units.
7. **TERMS AND CONDITIONS OF CONTRACT/AGREEMENT BETWEEN NHA AND CONTRACTOR**

### 7.4 TERMS OF PAYMENT (Cont.)
- NHA Project Office shall be in-charge of supervision

### 7.5 PROGRESS PAYMENT
- Contractor to submit Statement of Work Accomplished (SWA) and request for progress payment for work accomplished duly certified by NHA Project Engineer/Architect
- No materials and equipment delivered on site but not completed but in place shall be included for payment
- NHA to deduct the following from certified gross amounts to be paid to Contractor:
  - a. Cumulative value of work previously certified
  - b. Portion of advanced payment to be recouped for the month
  - c. Retention money per contract
  - d. Amount to cover third party liabilities
  - e. Amount to cover uncorrected discovered defects in the works
7. TERMS AND CONDITIONS OF CONTRACT/AGREEMENT BETWEEN NHA AND CONTRACTOR

7.6 RETENTION MONEY

- Progress payments subject to 10% retention
- If after 50% is completed and work is satisfactorily done, and on schedule, no additional retention shall be made, otherwise, 10% retention shall be imposed
- Total retention money to be released upon final acceptance of works
- Contractor may request substitution of retention money for each progress billing with irrevocable standby letters of credit from a commercial bank, bank guarantees or surety bonds on demand.
- Irrevocable letters of credit, bank guarantees and surety bonds to be posted in favor of NHA to be valid for 1 year
- 10% retention shall be released upon:
  - Issuance of NHA of Certificate of Completion
  - Submission by Contractor of surety bond from GSIS Insurance Fund or any insurance company duly accredited by the Insurance Commission (30% of Contract Price) within a period of 1 year
7. TERMS AND CONDITIONS OF CONTRACT/AGREEMENT BETWEEN NHA AND CONTRACTOR

### 7.7 CONTRACT COMPLETION
- Upon 95% completion, NHA shall create an inspectorate team to conduct preliminary inspection and prepare punch list.

### 7.8 LIQUIDATED DAMAGES
- Contractor to pay NHA liquidated damages if Contractor fails to satisfactorily complete the work within specified contract time (Equal to 1/10 of 1% of the cost of the unperformed portions of work per every day of delay).
- Liquidated damages shall be deducted from any money due or may be due to the Contractor, or any securities posted by the Contractor, whichever is convenient for NHA.
- NHA may rescind contract, forfeit Contractor’s performance security and takeover the prosecution of the project, or award the same to a qualified Contractor in case delay in completion of work exceeds a time duration equivalent to 10% of the specified contract time plus any time extension granted the Contractor.
7. **TERMS AND CONDITIONS OF CONTRACT/ AGREEMENT BETWEEN NHA AND CONTRACTOR**

<table>
<thead>
<tr>
<th>7.8 LIQUIDATED DAMAGES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liquidated damages shall not exceed 10% of the total contract price</td>
</tr>
<tr>
<td>For terminated contracts, procedures prescribed in RA 9184, as amended shall be adopted</td>
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</tbody>
</table>

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<tr>
<th>7.9 SUSPENSION OF WORK</th>
</tr>
</thead>
<tbody>
<tr>
<td>NHA may suspend work due to force majeure or any fortuitous event</td>
</tr>
<tr>
<td>Contractor may suspend work after 15 calendar days from date of receipt of Notice from the Contractor due to the following:</td>
</tr>
<tr>
<td>Peace and order conditions</td>
</tr>
<tr>
<td>Delay in payment of Contractor’s claim for progress billing beyond 45 calendar days the claim has been certified by NHA</td>
</tr>
</tbody>
</table>

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<thead>
<tr>
<th>7.10 TIME EXTENSION</th>
</tr>
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<tbody>
<tr>
<td>Per Annex “E” of IRR of RA9184</td>
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<table>
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<tr>
<th>7.11 TERMINATION OF CONTRACT</th>
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<tbody>
<tr>
<td>Per Appendix 4 of IRR of RA9184</td>
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<tr>
<th>7.12 DURATION AND DELIVERY SCHEDULE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contractor to prepare Construction Schedule-PERT/CPM and S-Curve showing contract duration of 15 months (for max. 1,000 housing units), reckoned from date of issuance of Notice to Proceed (NTP)</td>
</tr>
</tbody>
</table>
8. SUBMISSION OF PROPOSALS

NHA YOLANDA PERMANENT HOUSING PERMANENT HOUSING PROGRAM
8.0 SUBMISSION OF PROPOSALS

• Proposals with the required supporting documents shall be submitted to NHA in a sealed envelope on or before September 02, 2014

• Addressed to the General Manager, Attention: The Chairperson, Bids and Awards Committee (BAC)
9. OTHER REQUIREMENTS

NHA YOLANDA PERMANENT HOUSING PERMANENT HOUSING PROGRAM
For Completed Housing Units and Project Facilities:

- Various test results being required by the concerned Project Office/ PMT shall be submitted

For Housing Projects to be constructed or with on-going construction:

- Various material testing requirements shall conform to minimum standards
10. EVALUATION OF PROPOSALS
10.0 EVALUATION OF PROPOSALS

1. First Level Evaluation
   o Evaluation of individual proposals as to compliance

2. Second Level Evaluation
   o Average Price Per Unit
   o Location of Property
   o Production and Delivery Schedule
   o Accessibility to Site
   o Acceptability of Site by the LGU
IN SUMMARY

• ACQUISITION OF COMPLETED HOUSING UNITS IN EASTERN VISAYAS (171 MUNICIPALITIES)
• DISASTER RESILIENT HOUSING PARAMETERS
• USE OF NEW TECHNOLOGIES THAT ARE AITECH ACCREDITED
• GOVERNMENT AND PRIVATE SECTOR PARTICIPATION THRU REGULAR AND NEGOTIATED BIDDING
END OF PRESENTATION
THANK YOU!