ARCHITECTURE AND ENGINEERING FOR SUSTAINABLE AND RESILIENT VERNACULAR CONSTRUCTION IN THE PHILIPPINES

UP-DOST PCIEERD
BUILD BACK BETTER PROGRAM
PROJECT UPDATE

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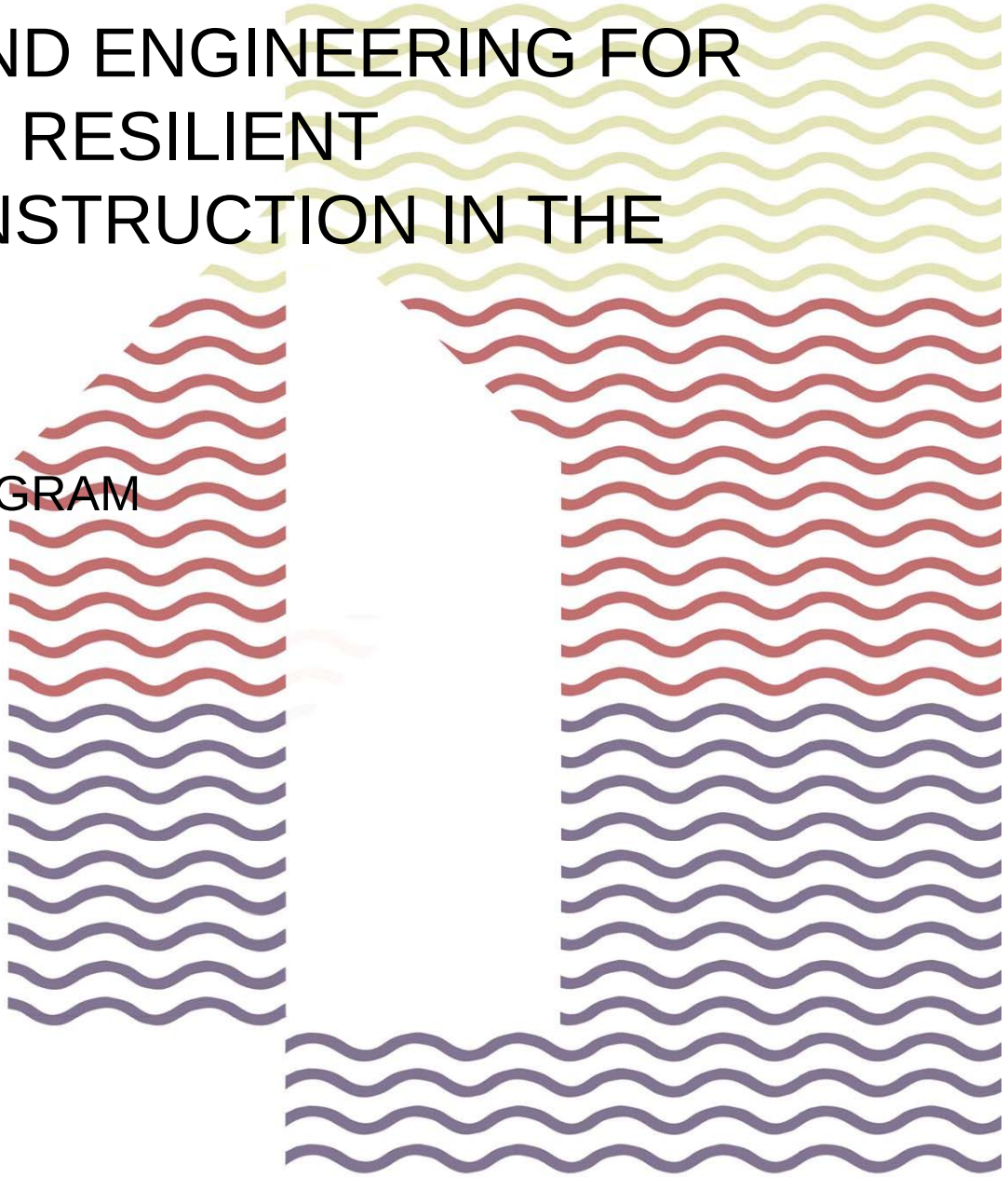


Program Background

WHAT IS THE BUILD BACK BETTER PROGRAM?

Department of Science & Technology
as Monitoring Agency

University of the Philippines – Diliman
Overall Implementing Agency

UPD College of Architecture as Program Lead &
Project Study Implementer for Architectural Design

UPD Institute of Civil Engineering
as Project Study Implementer for Structural Engineering

UPD School of Urban and Regional Planning
As Project Study Implementer for Planning

Project Components

UP SURP

PROJECT 1:
Planning Guidelines for Disaster Response and Rehabilitation of Communities and Localities via Supply Chain and Delivery Management, and Risk-Sensitive Environmental Planning

UP CA

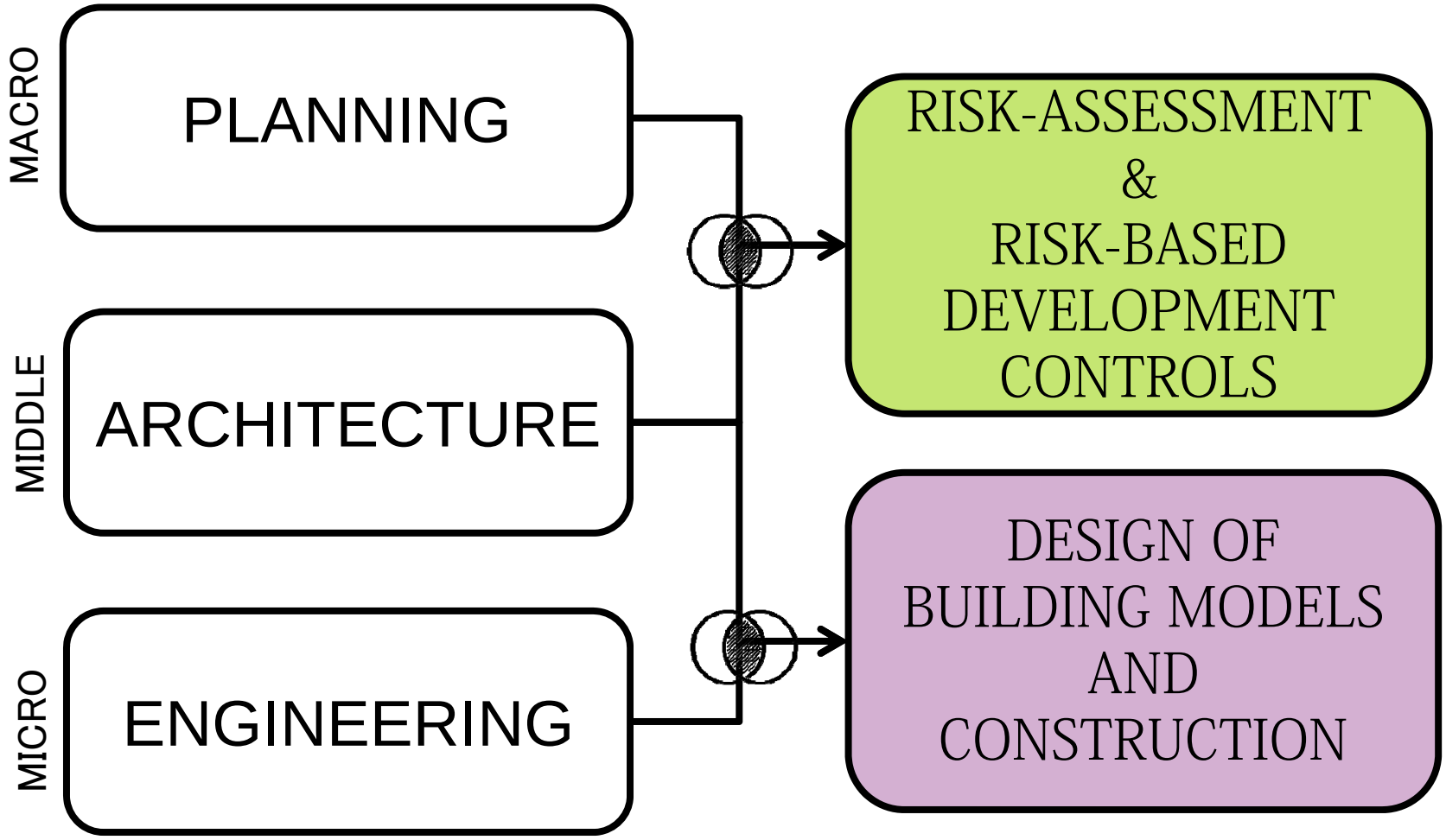
PROJECT 2:
The Architecture of Filipino Resilience: The Adaptation of Traditional Wisdom from Selected Philippine
Vernacular Architecture into Modern Building Systems

UP ICE

PROJECT 3:
Structural System and Construction Methodologies Resilient to Earthquake and Severe Wind Loading

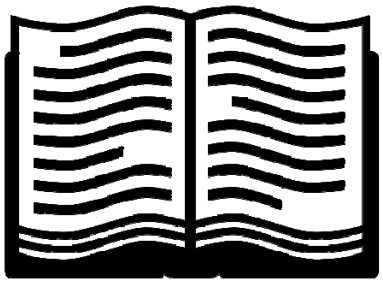
Integration Points

PLANNING-ARCHITECTURE-ENGINEERING



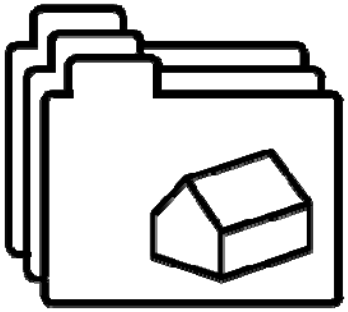
Project Output

ARCHITECTURE PROJECT



1

GUIDELINES FOR DISASTER RESILIENT SITE PLANNING AND ARCHITECTURAL DESIGN



2

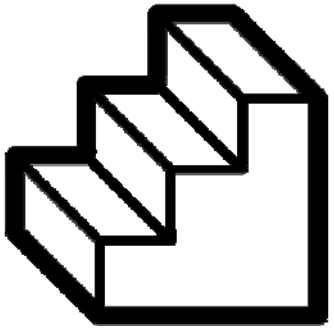
DESIGN FOR BUILDING MODELS:

→ PERMANENT SELF-BUILD HOUSING

OUTPUT 1:

ARCHITECTURAL GUIDELINES FOR DISASTER RESILIENCE

UP-DOST PCIEERD
BUILD BACK BETTER PROGRAM

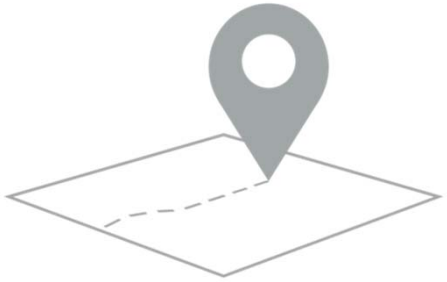


LEVELS OF ARCHITECTURAL INTERVENTION

REDUCING IMPACTS OF HAZARDS

Levels of Intervention

IN REDUCING IMPACTS OF NATURAL HAZARDS



LEVEL 1: SITE SELECTION

In any project, it is ideal to be located in an area without or with minimal exposure to natural hazards.

LEVEL 2: SITE MODIFICATION

Interventions applied to the physical traits of an area (e.g. slope, grading, drainage, landscape). They can offer protection to structures, make evacuation more efficient, or more importantly even divert directions of hazards.

Levels of Intervention

IN REDUCING IMPACTS OF NATURAL HAZARDS

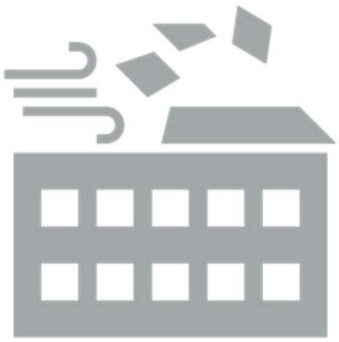
LEVEL 3: BUILDING DESIGN OR MODIFICATION

Enhancing the resilience of the building through interventions in building configuration (shape, spacing, layout), and proper building assembly.

Hazard-Specific Interventions

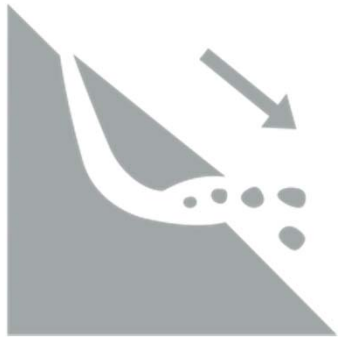
DIFFERENT AREAS = DIFFERENT HAZARDS

Rain-Induced Flooding



High-Velocity Winds

Earthquakes



Landslides

Blindly Adopting
Identical Designs
Across Different Areas
in the Philippines

Increases Disaster Risk

DIFFERENT AREAS =
DIFFERENT HAZARDS =
HAZARD-SPECIFIC INTERVENTIONS

There is NO One Size Fits All Solution

Guided Innovation

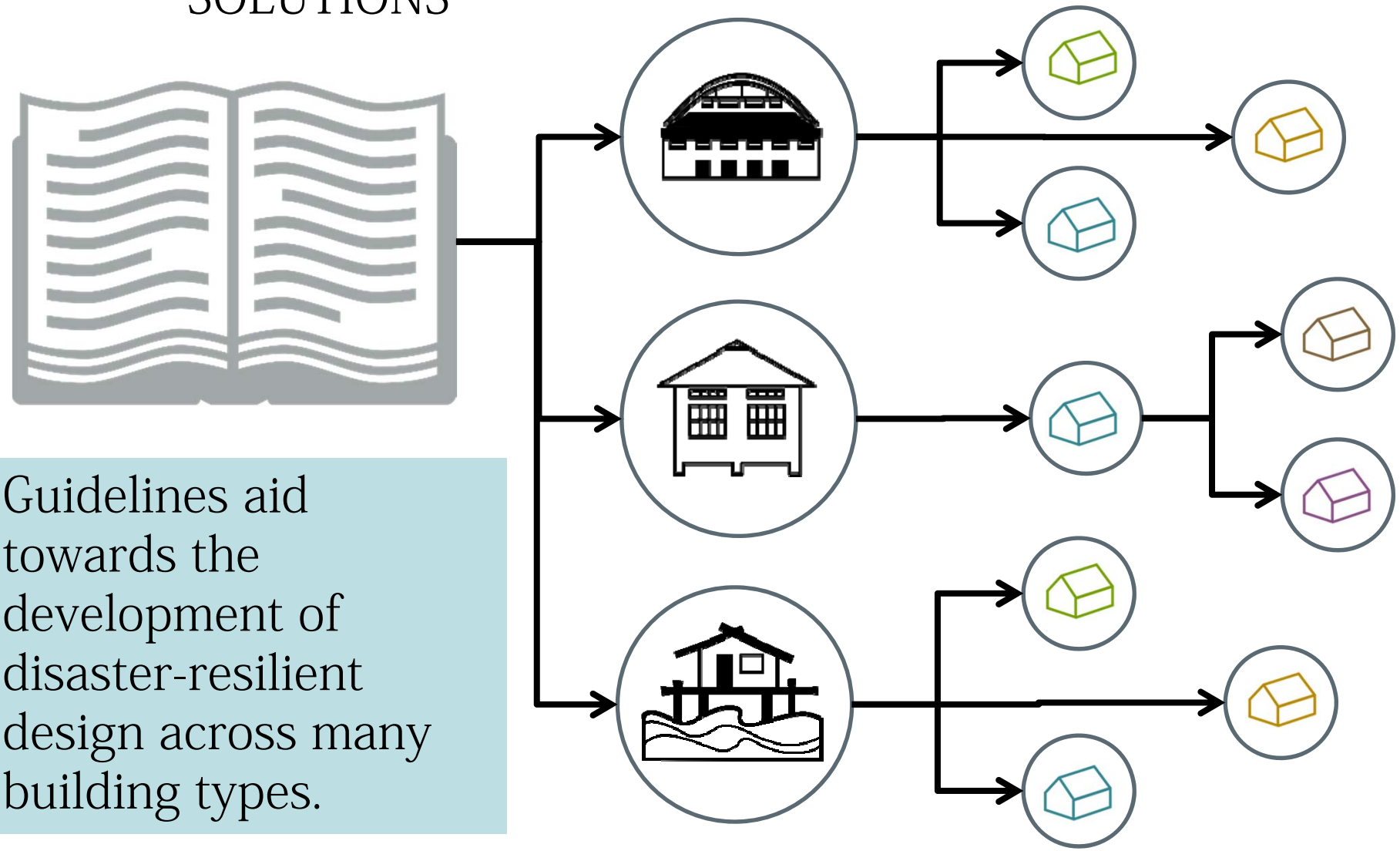
INFORMED CREATIVITY AND DIVERSITY OF SOLUTIONS

GUIDELINES OUTLINE PERFORMANCE GOALS.

We can have similar hazard-specific performance goals, yet solutions can be diverse.

Multiple Modalities

SINGLE GUIDELINE = DIVERSE RESPONSIVE SOLUTIONS



Guidelines aid towards the development of disaster-resilient design across many building types.

Traditional Filipino Wisdom

THE CASE OF DIVERSE REGIONAL ARCHITECTURE