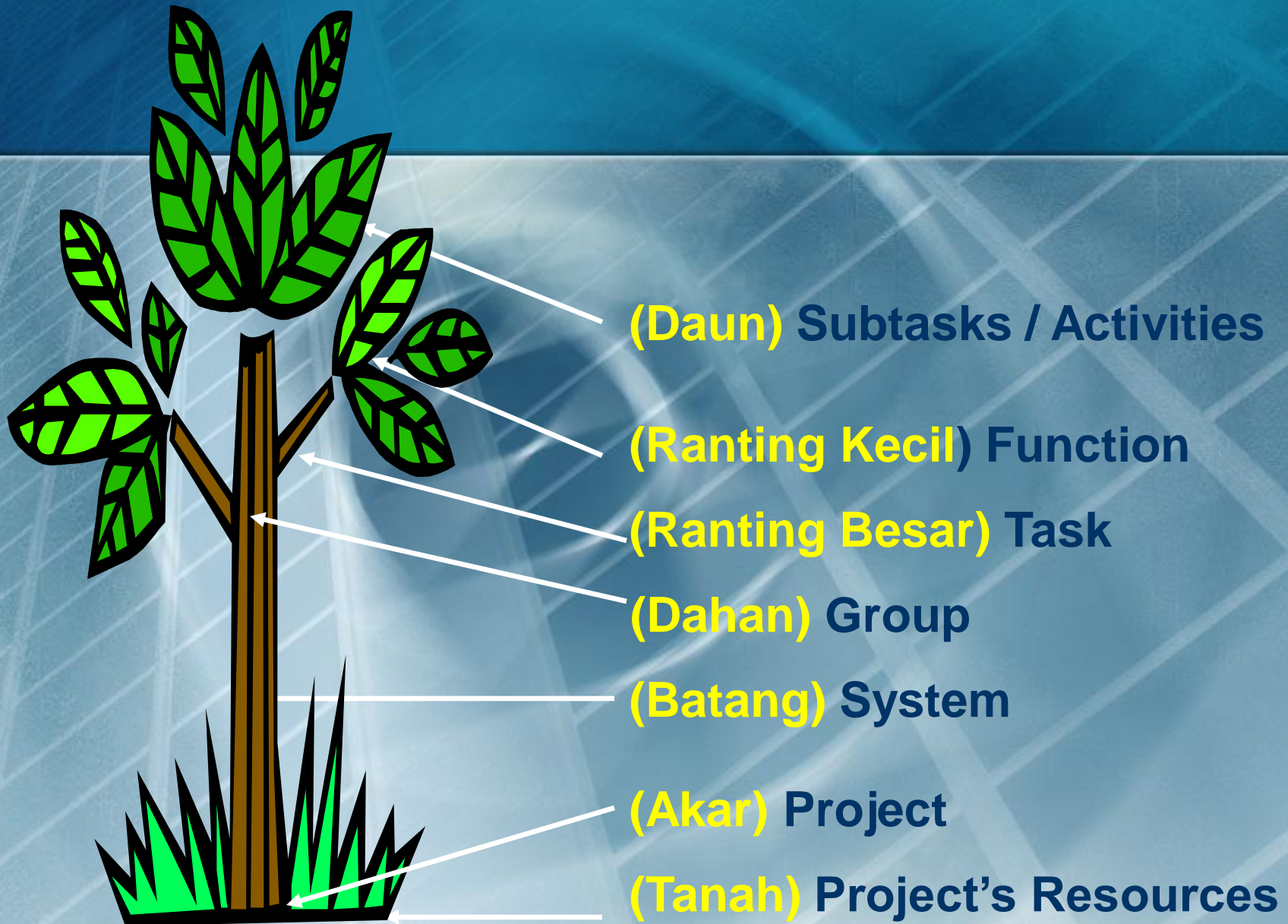


LECTURE 7:

Planning & Control Functions & Tools (Part 1)

Objectives of this chapter

1. Understand the **methodology** of project planning:
 - Project / Work Breakdown Structure (WBS)
 - Work Control Packages (WCP)
 - Task / Responsibility Matrix



Product versus Project Planning & Control

- **Product: results** being produced by the project.
- **Project: process** by which this product is being created.

The Project Breakdown Structure (PBS) or Work Breakdown Structure (WBS)

PBS = WBS = P/WBS

In complex project, a systematic approach to:

- Define total project.
- Establish all elements into a proper relationship.
- Breakdown a complex project into level-by-level basis (big to small)
- Avoid any element is overlooked.

Mind Map about the Concept

PROJECT Produce a new model of XXX mobile phone

SYSTEM R&D for the “Attached Digital Camera”

GROUP ... Digital Camera

TASK ... Sensitivity & focus power

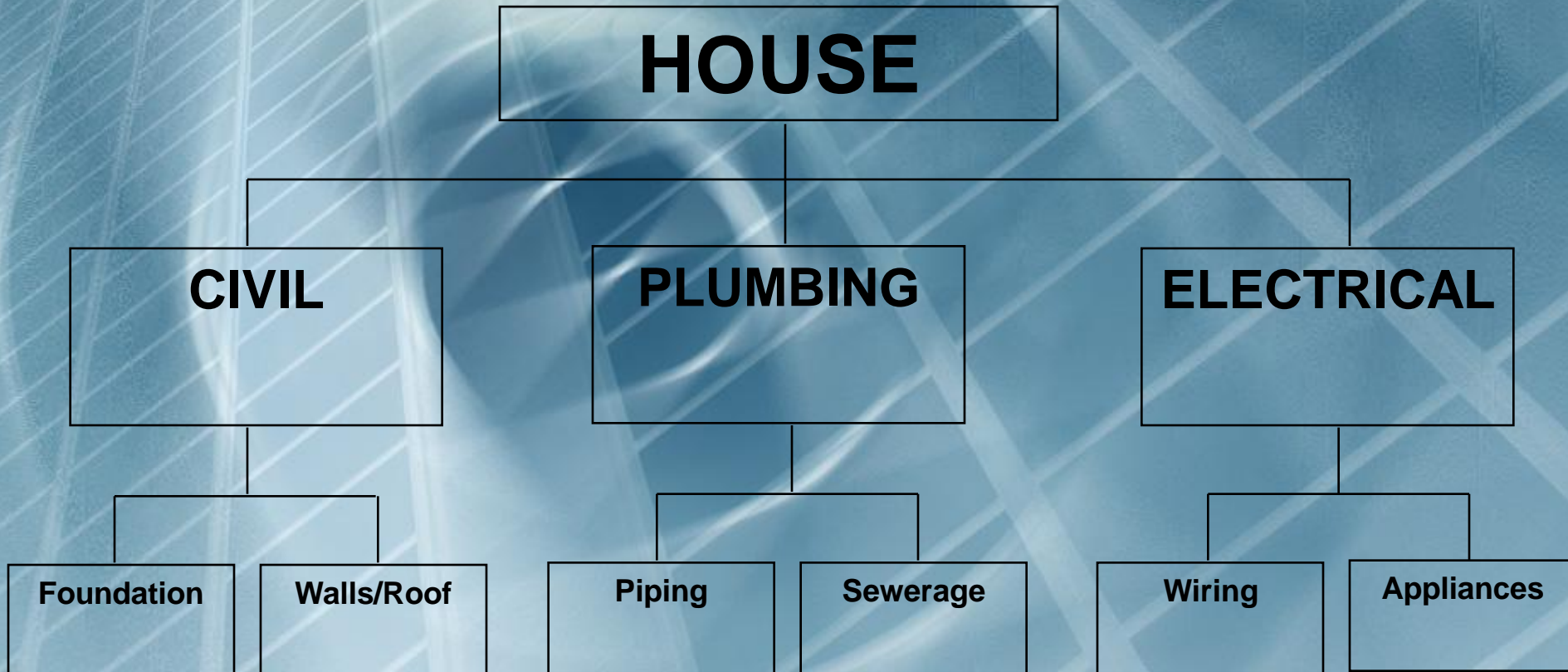
FUNCTION ... 5.0 Mega Pixel Focus Power of Sharpness

SUB TASK (ACTIVITIES) ... Multi Coated Lenses

Smaller
More
Specific



HOUSE PROJECT WBS



Description of PBS or WBS

- It's a **graphic / word** model in **level by level** fashion **down** to detail.
- It include:
 - (a) All deliverables end items.
 - (b) Major functional tasks that must be performed (design, assemble).

PBS or WBS

- **PBS or WBS**: product oriented family tree composed of hardware, software, services, data & facilities.
- It displays & defines the product/s to be developed / produce.
- It relates elements of work to be accomplish to each & other.
- It can be expressed down to any level of interest.

MAIN PROBLEM IN WBS

- The elements are defined in short descriptions that often leads to confusion, miscommunication & unclear expectation.

EXTENDED WBS DICTIONARY

- Solution-linking each element to “dictionary like” item that contains descriptive text.
- **Ward (2001)** defines “extended WBS Dictionary” as an electronic data base system that links variety of information to each element of the WBS.

The P/WBS

- Project can be broken down into different ways to suite the needs.
- **Most important** - is to **correlate & integrate** information with the systematic P/WBS that all PO & PT agree to & understand.

Creating a BS

- **P/WBS is developed by combination of *Product BS (Activities)* + *Product Development Process (Project)*.**

- **W/PBS chart is created:**
 1. Starting at the top level element (*level 1 Project*)
 2. Breaking out the major elements (*systems, group, task, function, sub task*) at next lower level.

- **This level by level breakdown continues reducing**
 - (a) scope
 - (b) complexity
 - (c) cost of each element

Until the "practical" / "implement-able" level of end item is identified.

Using the WBS

■ The WBS is a means for visualizing the entire project. **Following steps outline** its customary use:

1. Develop the initial WBS in a top down fashion.
2. Review & revise the completed WBS with PO & PT member until agreement is reach.
3. Identify work control package = task
4. Identify each WBS element & include each task:
 - Responsible & performing organizations
 - Product specifications

...Using the WBS

- Prime & subcontractor & major PO
- └ Resources estimate & budget
- └ Work order number
- Cost account number in task level
- Milestone events & activities (PERT/CPM/PDM)
- Summarize resource information up the WBS = update the information. (comparing actual & planning).

5. Add expenditures to date.
6. Evaluate results to identify problems & take corrective action.
7. Re-plan to balance schedule, resources & scope of work.

Definition of Tasks

- **Work Control Packages = Task**
- Tasks are **final elements** in P/WBS & located at the **end of BS**.

Task Statement of Work

- Each task is defined by a statement. This include:
 - (a) Summary statement of the work to be accomplished.
 - (b) Inputs required from other tasks.
 - (c) Reference to specifications, contractual conditions.
 - (d) Specific results to be achieved (deliverable, specifications)....to form a task statement of work.

Types of Tasks & Effort

- There are several of tasks. These include: **Design & development, Manufacturing, Construction of installation in field, Procurement (purchase & subcontract), Management & etc.**

- 3 basic efforts exits as follow:
 1. Readily identified tasks
 - Specific start & end events associated with the results. *Ex: Market study / survey*

 2. Level of effort tasks
 - Activities which not associated with defined results but controlled by time phased budget. *Ex: Salaries*

 3. Apportioned effort
 - Sub activities related to other task. *Ex: Activity 2, Sub activity 2.1*

Task / Responsibility Matrix

- Relating the work defined by PBS to responsible organizational units / organizational BS (subcontractor, individuals).

Work Breakdown Structure

