ART 2650
Introduction to Design Process and Programming
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Online

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Architecture & Interiors: Design Process

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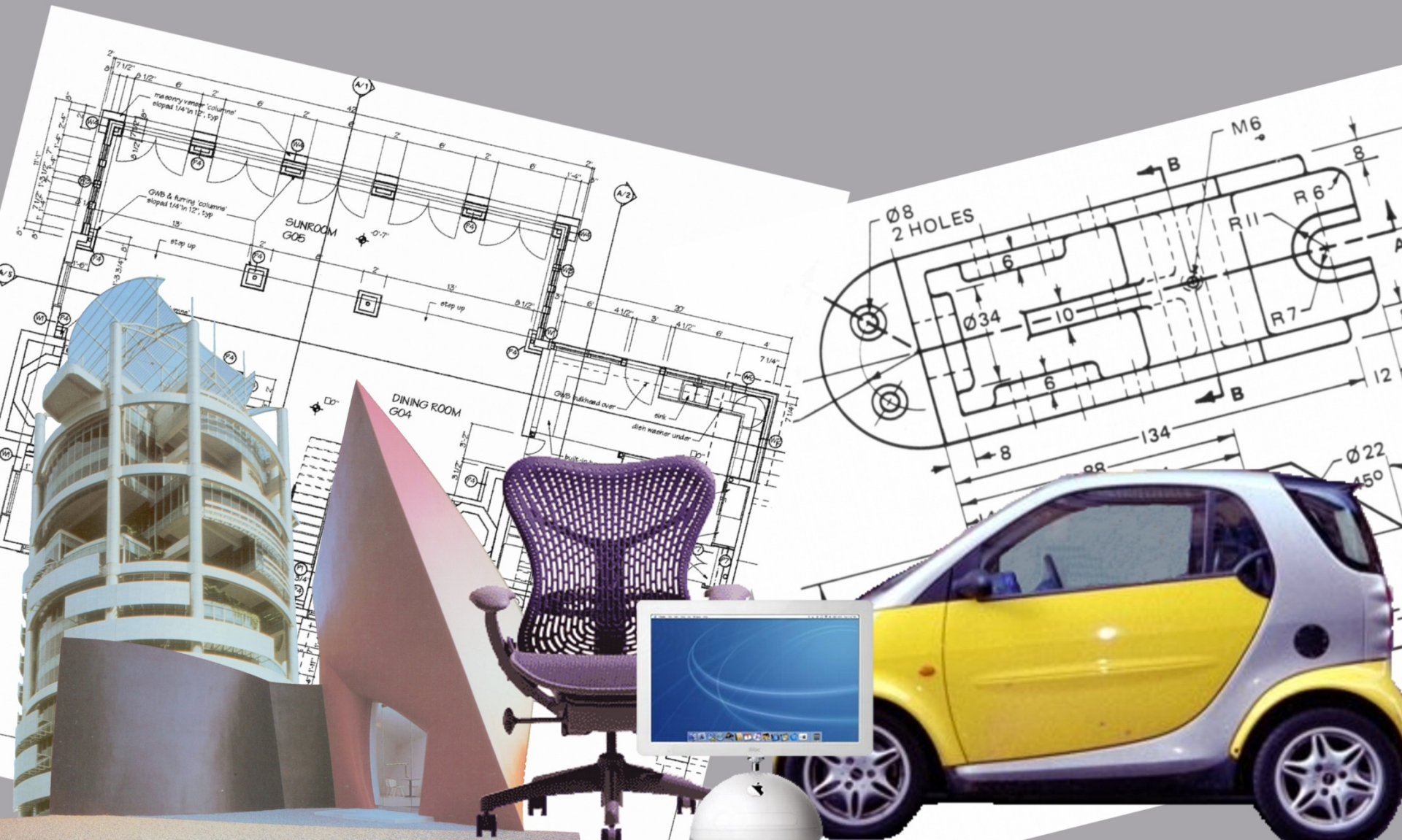

- What is Programming in Design?

Design is concerned with *satisfying human needs*.

The *outcome* or *result* of interior *architectural design* is an interior *environment* that meets some stated needs.

The activity of interior architectural design consists of certain kinds of tasks…

done in a specific order usually called a

design process.

The ***Design Process*** begins when a *client* identifies a *need* to accommodate *new* or *expanded activities*…

…with the *alteration, ‘re-design’ of an existing building interior*.

The *client* will typically *interview* a *number* of *design firms* in order to determine which one will have the combination of *experience*, *skill* and *resources* that will make them the *best choice* to design the building.

The '*successful*' or *selected designer* will be *hired* – or ***commissioned*** – to carry out the *design project*.

The *designer* works closely with the *client* in order to clearly understand their *user needs*.

The *designer* then *produces* a ***Design Program***.

This is *a written document* that spells out the *characteristics* that the *new spaces* must have in order to *satisfy the identified needs*.

The ***Design Program*** is a *design brief, or listing of needs,* for the building.

It typically begins with a *Project Statement* - *design objectives* - describing the *general characteristics* of the proposed building and spaces.

- its *style* or *overall appearance*
- how it *relates* to its *surroundings*
- *energy* and *environmental impacts*

The *Program* also includes ***Design Requirements***.

These are *detailed* and *specific properties* that the building *must have* in order to be successful.

These are also referred to as design criteria.

The ***Design Requirements*** include:

Space List - *the functional areas that are to be provided.*

Sizes and Dimensions - the *floor area* and *critical lengths and heights* of the *spaces*.

Proximity Relationships - how *close* the spaces must be to each other and the *type of access* between them.

The ***Design Requirements*** include:

Fixtures and Fittings - detailed *built-in features and equipment* required to support the *functions* of the *spaces*.

Special Features - anything *unusual* that must be provided in order for the *spaces* to *function* properly.

Working with the *client*, the *designer* will also…

…identify the *budget* (*maximum cost*) for the *project*, divided into individual cost elements, such as *site services*, *parking and roadways*, *landscaping*, *foundations*, *structure*, *building envelope*, etc)

Working with the *client*, the *designer* will also…

…determine the *project schedule*, including *critical dates* and *lengths of time* required for various parts of the *design* and *construction work*.

Sometimes, the *client* will hire an *independent consultant*, usually another *designer,* to complete the building *Program*; someone who is a *specialist* in this type of building.

The selected *designer* must *review*, *evaluate* and *comment* on the *Program*, in a separate report…
*…*and be *in agreement with the client* before proceeding.

With the *Program* complete, and there to *guide the design activities*, the designer will next *generate design project ideas*.

This part of the *architectural design process* is called ***Schematic Design***.

Schematic Design is a search for an essential *organizing principle*…

…an idea that will suggest the *overall arrangement* and *form* for individual and groups of *spaces* that make up the building.

There are a series of *steps* to the *Schematic Design phase*:

Schematic Design

1. the creation of '*Bubble Diagrams* ‘ illustrating the *approximate size* and *relative position* of *spaces*, both the *horizontally* and *vertically*;

Schematic Design

2. '*fleshing out*' the *Bubble Diagrams* into *two-dimensional rough Schematic Plan layouts* and *three-dimensional Massing Models*, by incorporating specified *floor areas* and *critical dimensions* (lengths and heights) of Spaces;

Schematic Design

3. *studying* the *Massing Models* on the *site* considering:

- the *location* of the *building* relative to *property lines* (*setbacks*), *topography* and other *physical features*

- the *orientation* of the *building* to *sun, winds, other buildings* and *surroundings*

- *access* to/from the *building* and *site*

Schematic Design

4. *making adjustments* to the *Schematic Plans* and *Massing Models* to closely *integrate the building and site*

…the *building is shaped to fit the site* and/or the *site is altered* to *accommodate the building*.

During *Schematic Design*, a *number of alternative design ideas* are generated, and brought to the *same level of resolution.*

This process involves *switching back-and-forth* between two-dimensional *Schematic Plans* and three-dimensional *Massing Models* checking that the *requirements* of the design *Program* are generally being satisfied.

The *alternative Schematic Designs* are *presented* to the *client*...

…who *comments on*, *selects* and *approves* the '*best*' *design alternative* for *further elaboration, moving* into the ***Design Development*** *stage* of the process.

During ***Design Development***, the designer *revises* the *approved* d*esign* in response to the *client's comments and needs*…

…and the *Schematic Design* is *developed* to a *greater level of detail*.

During ***Design Development***, the *designer coordinates* the work of *other design professionals* who are responsible for different aspects of the building.

Engineers who design the *structural*, *mechanical* and *electrical services inside* the building.

During ***Design Development***, the *designer coordinates* the work of *other design professionals* who are responsible for different aspects of the building.

Civil engineers and *landscape architects* who design the *grading*, *drainage*, *planting* and *site features outside* the building.

During ***Design Development*** decisions are made about the *materials* and *methods of construction* to be used…

…especially with respect to the major elements of the interior…

…in order to '*realize*' the *design concept* that was established by the *Schematic Design.*

During ***Design Development*** the *space plan* is worked out in detail to ensure that the *layout* of the *interior* and *circulation spaces*, will allow the building to *function* the way it is intended to…

…and building *service systems* are designed that will *support* the *function* of *individual spaces.*

During ***Design Development*** a *cost estimate* is prepared to ensure that the design is within the established *budget*.

Also, the *project schedule* is reviewed to make sure that it can still be achieved.

The *developed design* is *presented* to the *client* for *review* and *approval*.

At this point, the *overall design*, and the *budget*, are '*frozen*'.

Design work now proceeds to the *next stage*: ***Contract Documents***.

The ***Contract Documents*** stage is when *working drawings* and *specifications* are produced.

These *documents* use a combination of *graphics* (*drawings*) and *written information* (*notes*, *schedules* and *specifications*) *describe* the *building* thoroughly and precisely enough that it will be possible to *construct* it.

In order to *describe* the *building*
thoroughly and precisely enough
that it will be possible to *construct*
it, the *designers* and *consultants*
must carry out a *enormous amount*
Of ***Detail Design***.

Detail Design is the *design* of the many *construction details* of the building, such as…

…the way that the *materials* and *components* of the *building envelope* are joined together to create a continuous air and vapor barrier.

Detail Design is the *design* of the many *construction details* of the building, such as…

…the *arrangement, size and shape* of *stairs*, *ramps*, *elevators* and other parts of the *building's circulation system*.

Detail Design is the *design* of the many *construction details* of the building, such as…

…the *fabrication* of *doors and screens* and the *assembly* of the *partitions* that create the *interior space plan* of the building.

Detail Design also includes the *design* of the many *fixtures and fittings – built-in components of the building* - such as *cabinets* and *counters*…

…and the selection of *interior finishes,* such as *floor coverings*, *ceilings, paint and coatings*.

The *Contract Documents* will be used by *potential constructors* to *prepare quotations* - to *tender* competing *bids* - setting out the *price* they would charge *to construct the building*.

Once a *constructor* has been selected, the *documents* will form part of a *legal agreement* – a ***contract*** – between the *constructor* and the *client/owner*.

Portions of the *documents* will be used by each of the many *sub-trades* that carry out *specific parts* of the work

(*concrete forming and pouring, structural steel erection, carpentry, plumbing, electrical work, etc*).

The general *contractor* will use the *contract documents* to *coordinate* and *schedule* the work of the *sub-trades* so that everything is done *safely* and *on-time*.

During the ***Construction*** stage of the project, the *designer* will make *periodic site visits* to *review* and *report* on the *progress* of the work, and to help resolve any problems that come up.

At this time, the *designer* will use the *Contract Documents* to *verify* that the work has been done correctly.