

A Look at the Design Process

Jon Coe. 25 September 2020.

Introduction. The planning process and design process have many similarities, the distinction being the relative size of the project. In Zoo terms, the arrangement of the entire zoo campus or of major precincts would be considered planning, while the arrangement and detailed development of single exhibits or linked facilities would be considered design work, which we examine here. For a more specific discussion of the planning process please look under that heading.

As a student of landscape architecture in the mid 1960's we were taught that, like the Scientific Method, there was a linear process for developing effective plans and designs for physical development of tangible assets (what I liken to the more contemporary term "hardware") and that these steps could also be useful in developing management and operational plans ("software").

Who is the designer? Women and men academically trained and skilled in design, such as architects, landscape architects, engineers, industrial and graphic designers and sometimes sculptures and master fabricators, can claim this title. This is always an interdisciplinary team including the builders. However, the clients and owners who hire and direct them can also rightfully claim the work as "their design".

Here are the typical stages of the facility, exhibit, or landscape design process.

1. Owner's Brief. This is a detailed description of **project requirements** developed by the owner (client) to guide the designers. Highly experienced owners are expert at this task, but experienced designers are often needed to assist in this essential pre-design work, for example by facilitating owner workshops or preparing "benchmarking" studies of comparable projects done elsewhere.

2. Inventory is the gathering of all information which may be useful in understanding the problem the design is to remedy ("problem definition"), needs of users and stakeholders and the context within which the project will be incorporated and embedded. Subject areas may include **natural factors**, such as existing climate, soils, topography, hydrology, vegetation and such, **existing conditions** of buildings and infrastructure and **management practices** in the area, **social/cultural/economic factors** such as information about **human users**, and zoo **animal natural history and needs**.

3. Analysis is the evaluation and grouping of information addressing and determining major project outcomes. These factors are then interrelated by mapping subjects such as **site suitability** and **opportunity/constraint maps** (areas most suited for certain functions).

4. Synthesis is the somewhat mystical or artistic process utilizing intellect, intuition, and experience to visualize design alternatives most suited to achieving the design goals identified by the user group and the designers. Typically, three different concepts are developed and compared before arriving at an approved design concept.

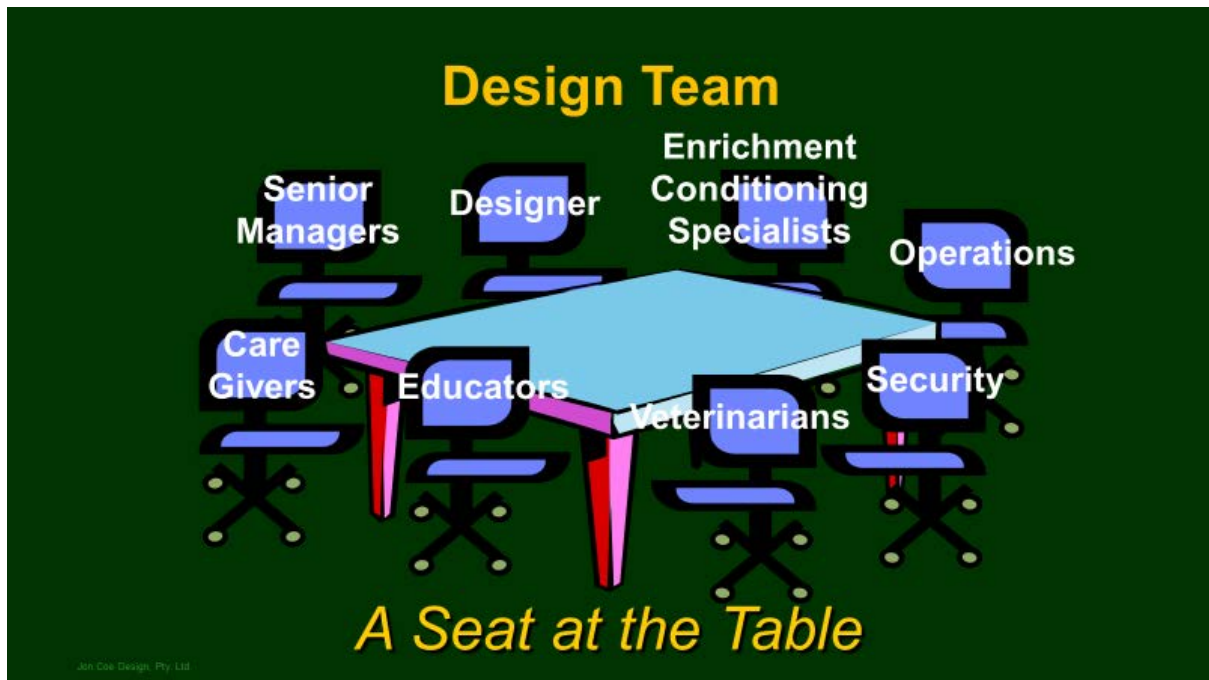
5. The approved design concept is then refined in three steps.

Schematic Design is used to "fix and describe" all elements of the design and usually leads to a preliminary cost estimate.

Design Development is the refinement of the schematic design into greater detail of each major component of the design, including a more extensive cost estimate.

Construction Documents (contracts, plans, specifications, and such) convert the approved design development plans into the technical language of the construction industry.

Engineering practice tends to use the terms **preliminary design** for the concept, schematic and design development stages, and **final design** for the construction documents. These and other terms vary greatly by location and culture internationally.



Inclusive & Integrated Design. As our world becomes more specialized there is an unfortunate trend of omitting the needs and values of important stakeholders from other professions or user groups. We must design for a community of stakeholders ranging from individual animals, their caregivers and support volunteers, to educators, building and grounds keepers, security staff, marketing department, donors, boards of directors, the visiting public of all types and even the community at large, whose good will (“social contract”) allows the zoo to exist. Thus, all stakeholders need an effective “seat at the table of decisions”, represented either directly or by well-informed proxies. It is useful to have a smaller yet diverse “core team” for frequent meetings and a larger, broader “advisory panel” to review progress at key points in the design process. Designers have the obligation to communicate their work and recommendations by means understandable by all.

Design Facilitation. The designer, whether an in-house staff person or independent consultant, is an active or even proactive member of the project team. While specialist workshop facilitators are sometimes used to moderate large groups, the lead designer often is expected to moderate project meetings. Success is best achieved by treating all stakeholders with genuine respect and ensuring no one, including the designer, dominates the meeting and no one is left out of open discussions, thus assuring a transparent and well supported design process. The resulting plans and policies will only be successful when broadly supported by stakeholders.



The creative process is easily learned.
It can be like a family trip.
Know who you are,
where are you going?
And why?
What are your resources,
time, wealth, friends, family?
What obstacles are expected?
What routes seem best,
highway or byway?
What milestones, what havens?
How will you know
when you arrive?

But once the trip begins,
chance and change interfere.
Travelers change the journey.
The journey changes the travelers.
Roads are clear
or fog bound.
Sometimes you have
to get out and walk
and walking can be
the best part.

For most
the journey is the means,
necessary, unavoidable.
But for some,
navigators of the creative process,
joy is in the journey,
arrival is only a break
between trips.

² Bedi, J., Editor. 2003. "Inventing the Environment", Lemulson Center of the Study of Invention and Innovation, American Museum of American History, Smithsonian Institution