Financial questions of construction projects

How to think about money vs. architecture?

It's all about the money (?)

- Costs/expenses
- Incomes/revenues

Cash-flow
What COSTS?

- Costs during the project
  - Building plot
  - Infrastructural facilities
  - Building
  - Outdoor constructions and installations
  - Furniture and artworks
  - Additional expenses
- Costs after the project:
  - Object management costs: (personal) costs in connection with the operation of the building
  - Operating costs
  - Maintenance costs

What COSTS?

- Cost estimation, calculation...
  - the accuracy depends on the details known
  - Basic budget ➔ Cost plan ➔ Cost estimation ➔ Cost calculation ➔ Cost check
  - preliminary estimation (based on samples)
  - cost estimation based on surface model (€/m²)
  - cost calculation based on technical specification (€/unit/work activity)
What COSTS?

- Preliminary cost estimation
  - Cost values of similar construction cases (functions)
  - Total cost / volume of an existing project (building) (m, m², m³)
  - Currency unit / construction unit e.g. € / m²
  - Planned volume m²
  - Modifications based on technical/organisational/architectural aspects
  - Estimated cost

What COSTS?

- Additional costs
  - Cost of the land/plot + Infrastructure
  - Preparation and organisation of the project (programming, surveying, management, PR, insurances, studies etc….) 2,5-15%
  - Designers (architecture & more…) 2-14%
  - Financing, legal costs 1-7,5%
  - Reserve and profit 5-20% (or more)
  - Interior design (Art, furniture, technology etc…)
  - Exterior (gardening, paving, etc…)
What COSTS?

- Future expenses
  - Management costs: salary of the staff, PR etc.
  - Operating costs: energy consumption (!), water, telecommunication, consumables
  - Maintenance costs: continuous maintenance and periodic refurbishments

Revenues at last

- Incomes
  - Based on the selling / renting prices of the different functions
  - Modifications based on the location, quality of the building, additional services etc...
  - Usage of the building
  - Risk

NPV = $C_0 + C_1/(1+r) + C_2/(1+r)^2 + ... + C_T/(1+r)^T$

(where $C_0$ is the initial cost, $C_n$ is the cash-flow, $r$ is discount rate and $T$ is time)