ANSWERS TO STUDY QUESTIONS

Chapter 28

28.1. A given development concept will cycle through analysis from at least four different disciplinary perspectives: urban economics (the real estate space market), architectural/engineering disciplines (physical analysis), legal/political analysis, and financial economics (the capital market and real estate asset market), not necessarily in that order (or indeed in any fixed order).

28.3. The major source of financial capital for the preliminary phase are developers and other private entrepreneurial equity providers, including sometimes private equity funds of the opportunistic style. The major source for the construction phase includes commercial banks for the construction loan debt capital and the developer and/or joint venture partners for the equity, including private equity funds (opportunistic style), REITs, sometimes institutions such as pension or endowment funds or foreign investors. The major sources for the lease-up phase are similar to the construction phase though may be more likely to include slightly less aggressive investors such as value-added funds. The major source for the long-term stabilized operational phase include for permanent mortgage financing life insurance companies, commercial mortgage-backed securities (CMBS), and other conservative institutions, while typical long-term equity providers include REITs, pension funds, private equity core funds, foreign investors, and sometimes corporate end-users.

28.5. Hard costs refer primarily to land and physical construction costs. Soft costs refer primarily to fees and permitting costs, including architectural, engineering, and legal fees and financing costs. The exact line between "hard" and "soft" costs is fuzzy and may vary from firm to firm or project to project.

28.7. The "front door" approach starts with an estimate of the costs of the development project and then works through the feasible debt financing of the project to arrive at the necessary implied rent or sale price that must be able to be charged for the completed asset in order to meet the debt financing requirements. The "back door" is just the opposite, commencing with an estimate of the rent or sale price the project will be able to command, then puts those into typical debt underwriting criteria to ascertain how much money can be borrowed, then assuming a maximum allowable loan-to-cost ratio arrives at the maximum construction cost and/or site acquisition cost that can be afforded. In either case, the result is at least a rough indication of the ready financing feasibility for the project, under standard debt financing arrangements.

28.9. a.

Potential gross revenue (20,000 × $15):	$ 300,000
− Vacancy at 5%:	$ 15,000
− Effective gross income:	$ 285,000
= Operating expenses not passed on:	$ 100,000
− Net operating income:	$ 185,000
÷ 1.20 (Required debt service):	$ 154,167
÷ 12 (Monthly debt serviced):	$ 12,847
→ Supportable mortgage amount:	$1,244,637
÷ 0.75 LTV (Minimum required value):	$1,659,516
− Construction cost:	$1,030,075
→ Supportable site acquisition cost:	$ 629,441

b.

Site and construction costs:	$1,300,000
× Lender-required LTV:	75%
= Permanent mortgage amount:	$ 975,000
× Annualized mortgage constant:[1]	0.123863
= Cash required for debt service:	$ 120,766
× Lender-required DCR:	1.20
= Required NOI:	$ 144,919
+ Estimated operating expenses (landlord):	$ 100,000
= Required EGI:	$ 244,919
÷ Projected occupancy (1-vac):	0.95
= Required PGI:	$ 257,809
÷ Rentable area:	20,000 SF
= Required rent/SF:	$ 12.89/SF

[1]From Chapter 8 and 17 we have the monthly mortgage constant: $(0.11/12)/[1-1/(1-0.11/12)^{240}] = 0.010322$. Multiplying by 12 gives the annual constant: $0.010322 \times 12 = 0.123863$.