

# Product Definition

## Chapter 6

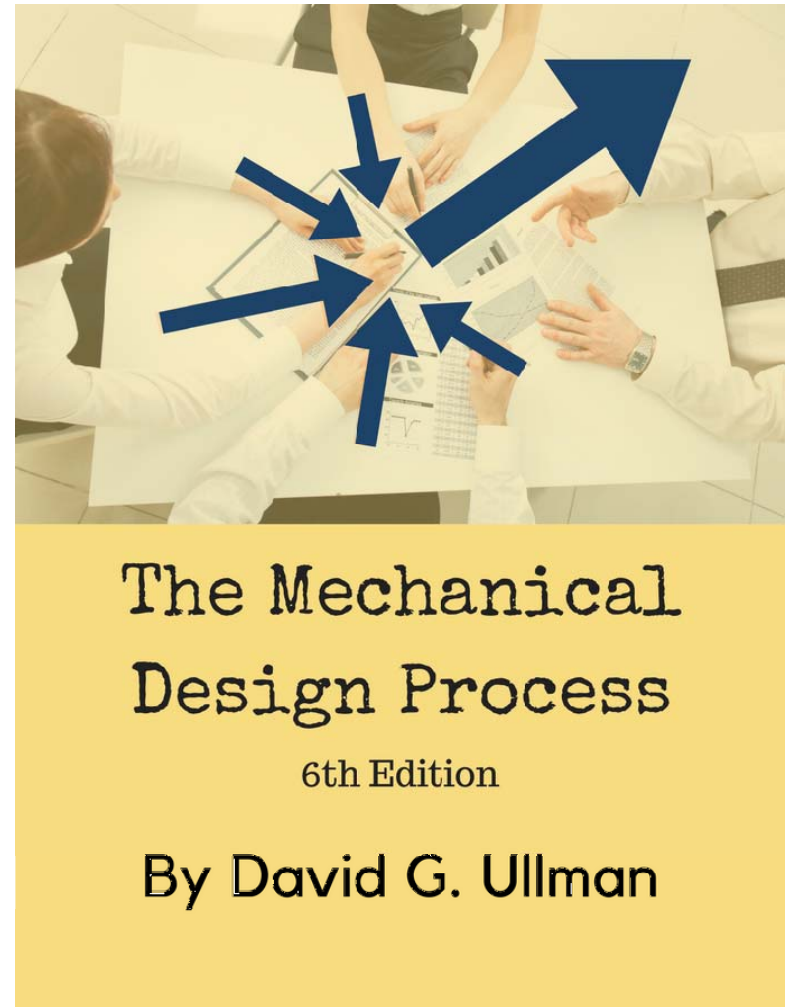
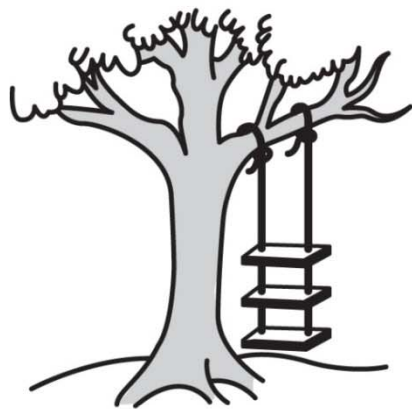
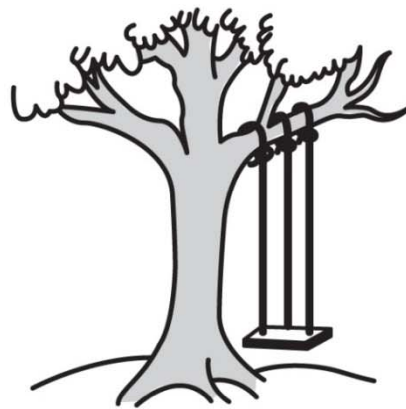


Figure 6.1



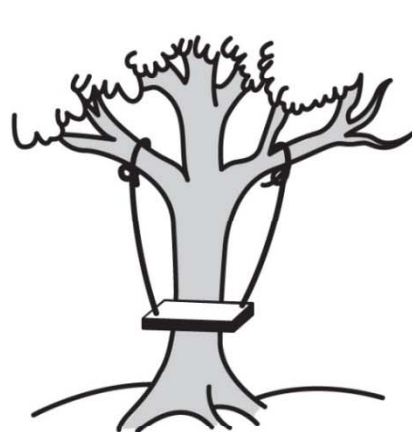
As described by sales



As designed by engineering



What manufacturing thought  
was wanted



As manufactured and shipped



As installed at the user's site



What the user wanted

Figure 6.2

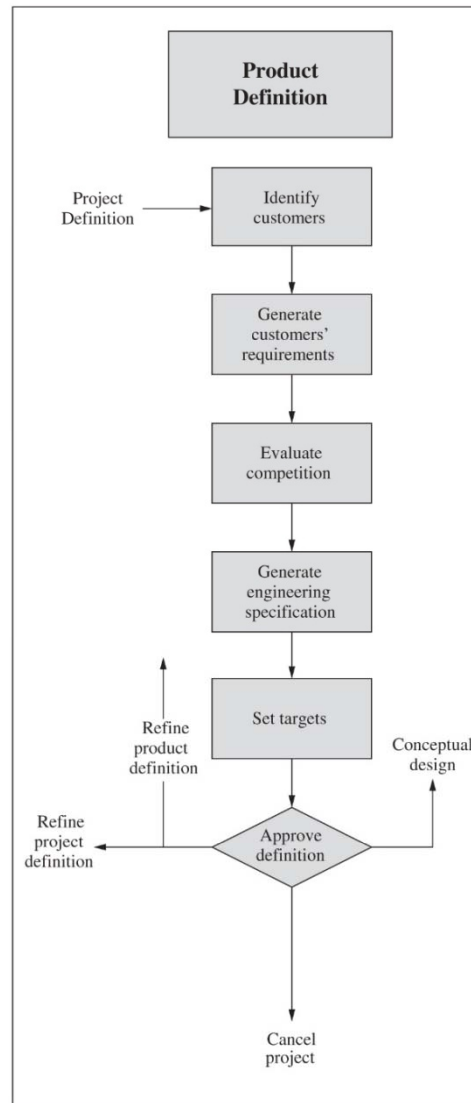
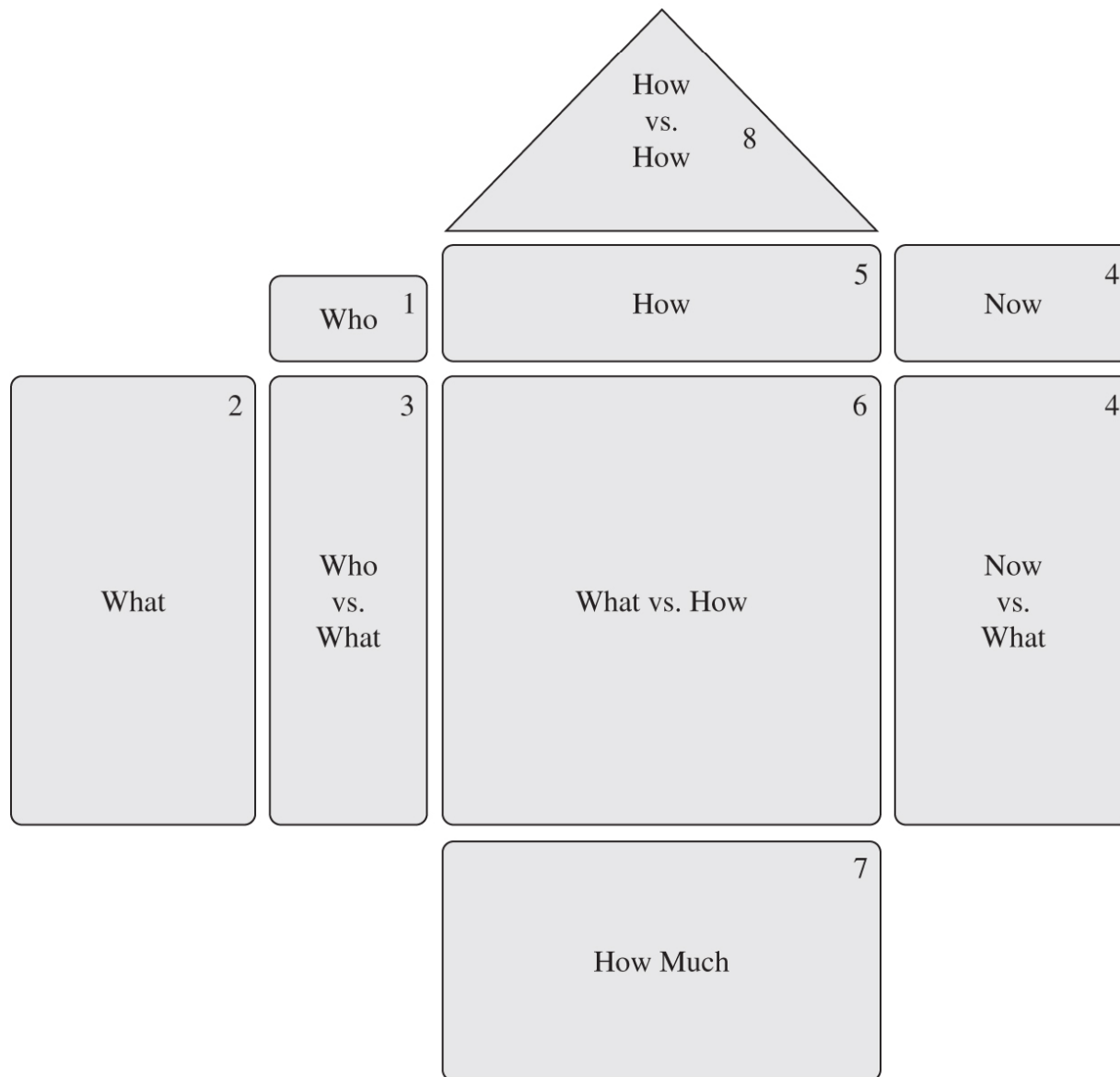


Figure 6.3



**Figure 6.4**



Columbia Medical

**Figure 6.5**

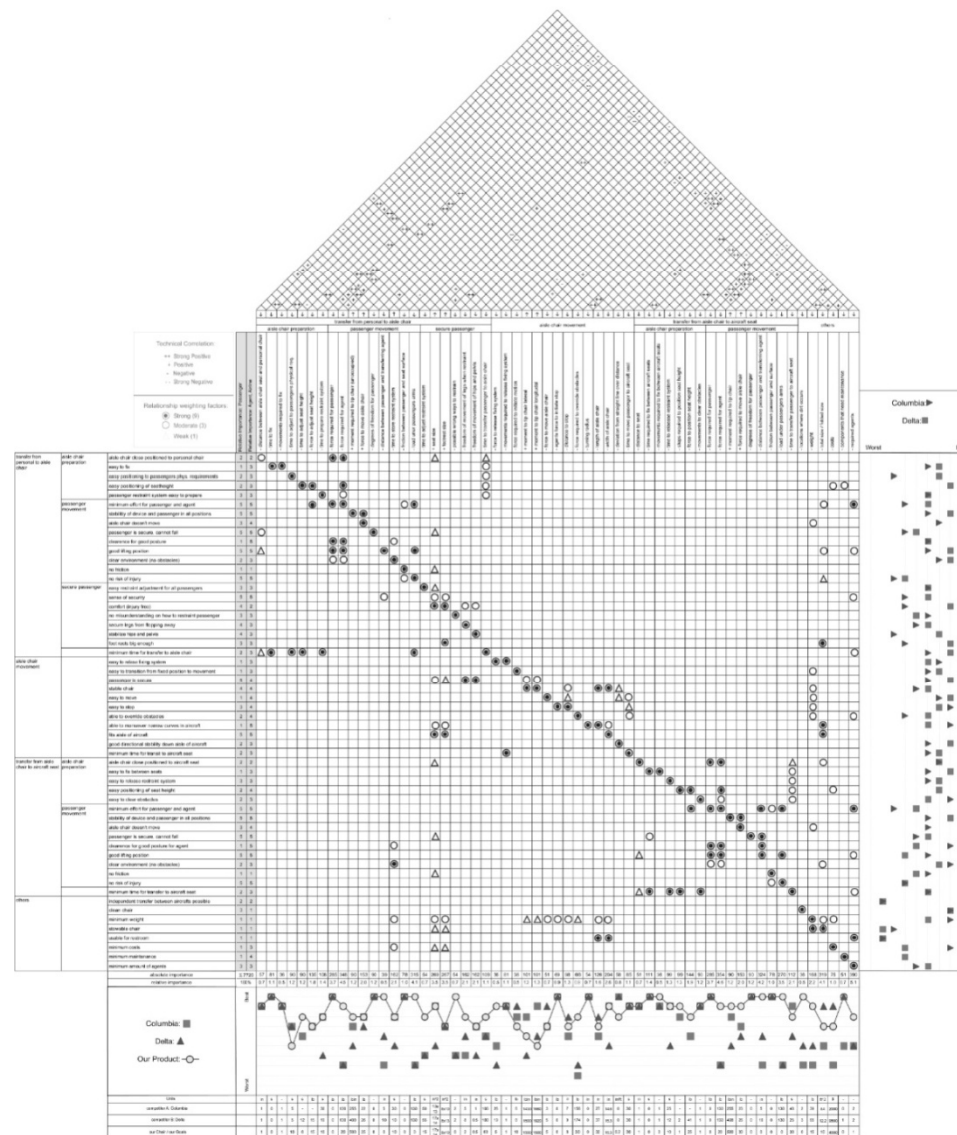
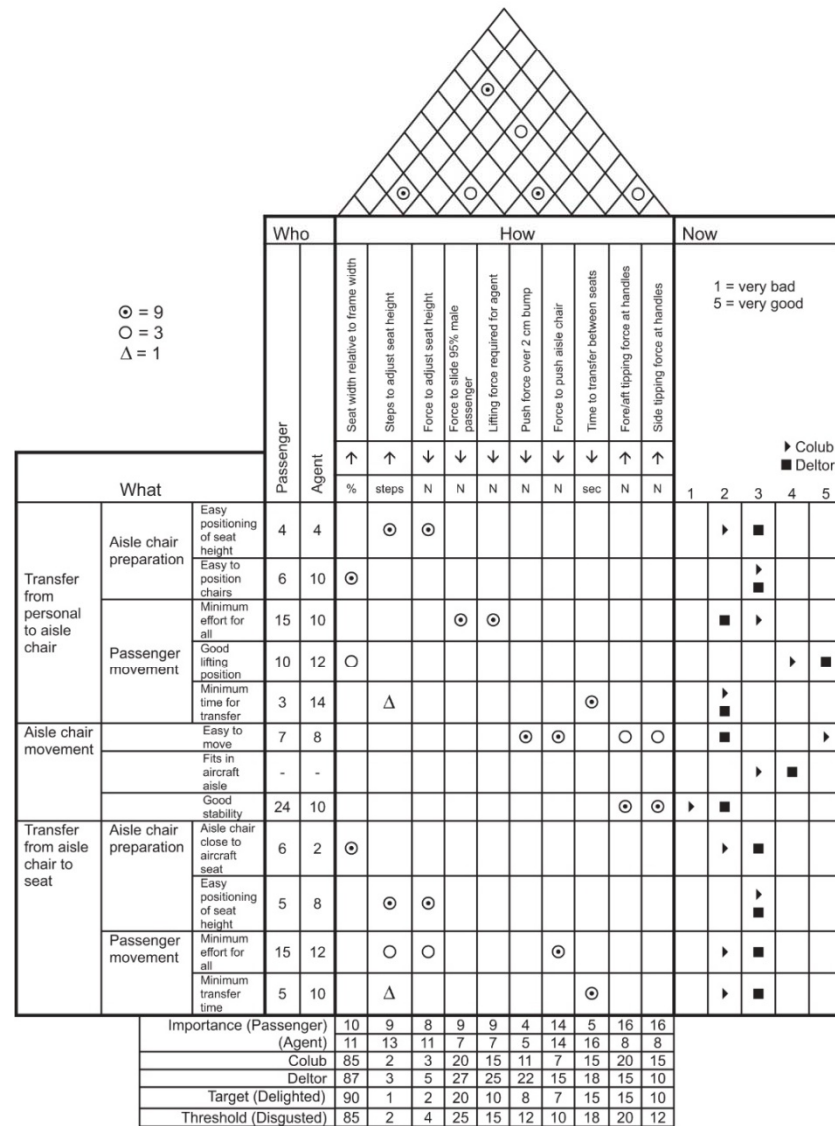
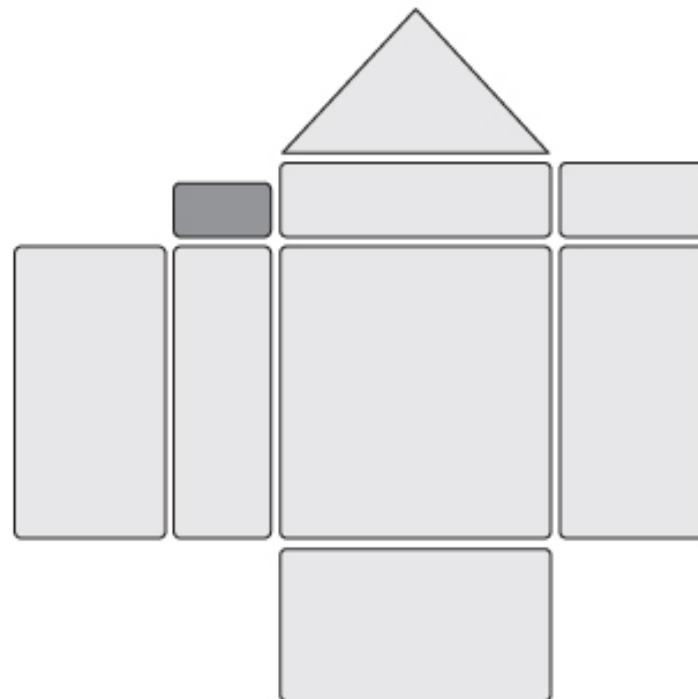


Figure 6.6







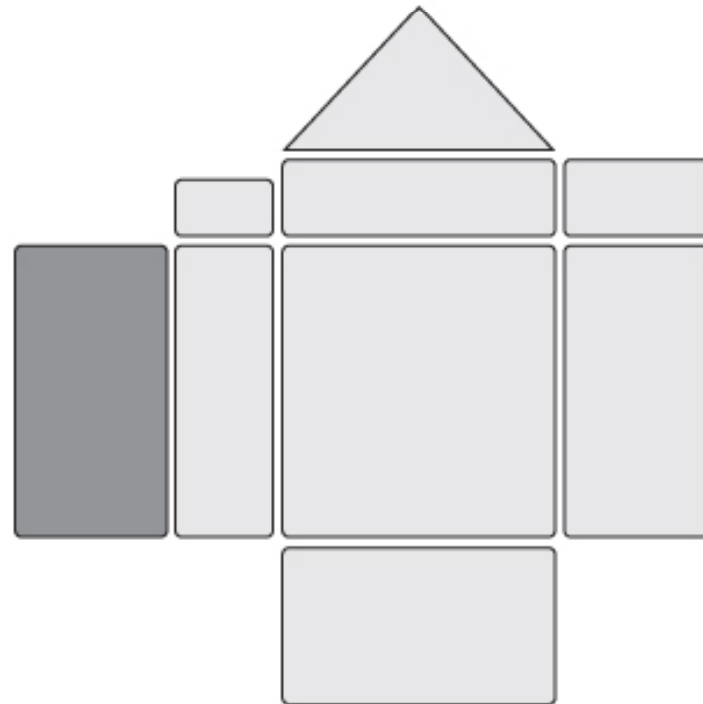
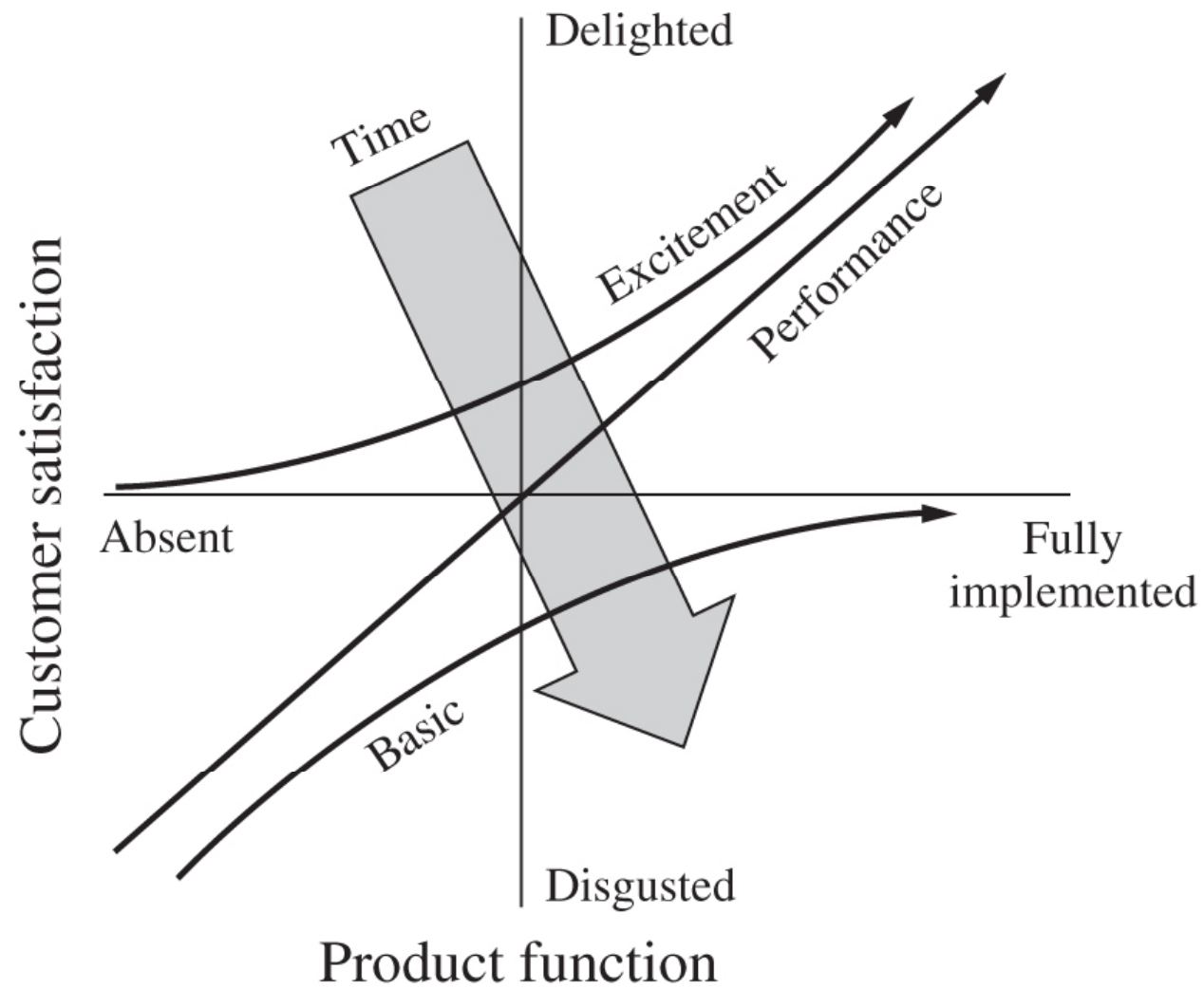
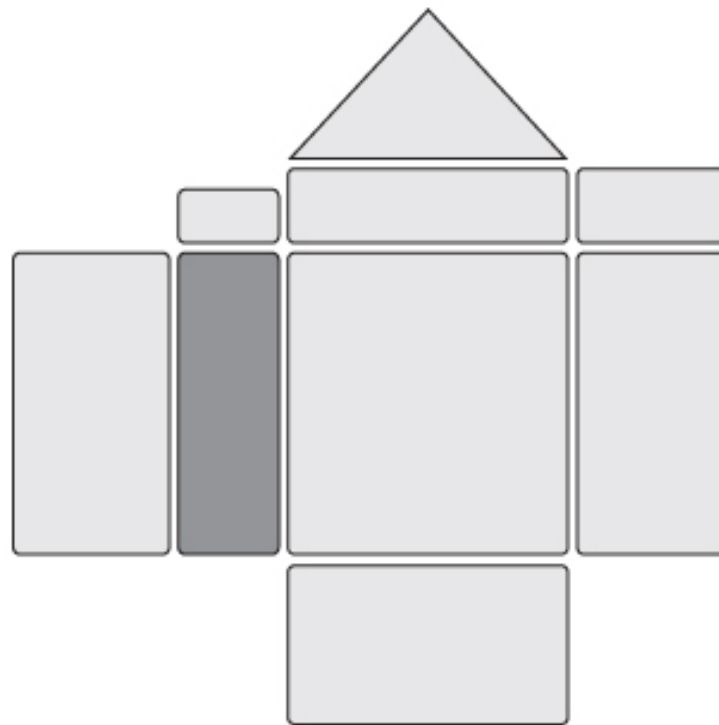


Figure 6.7





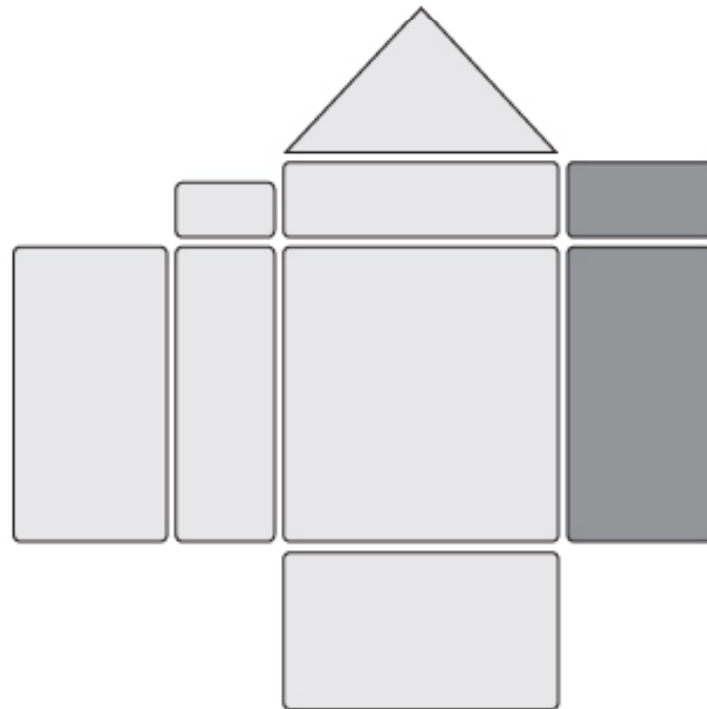
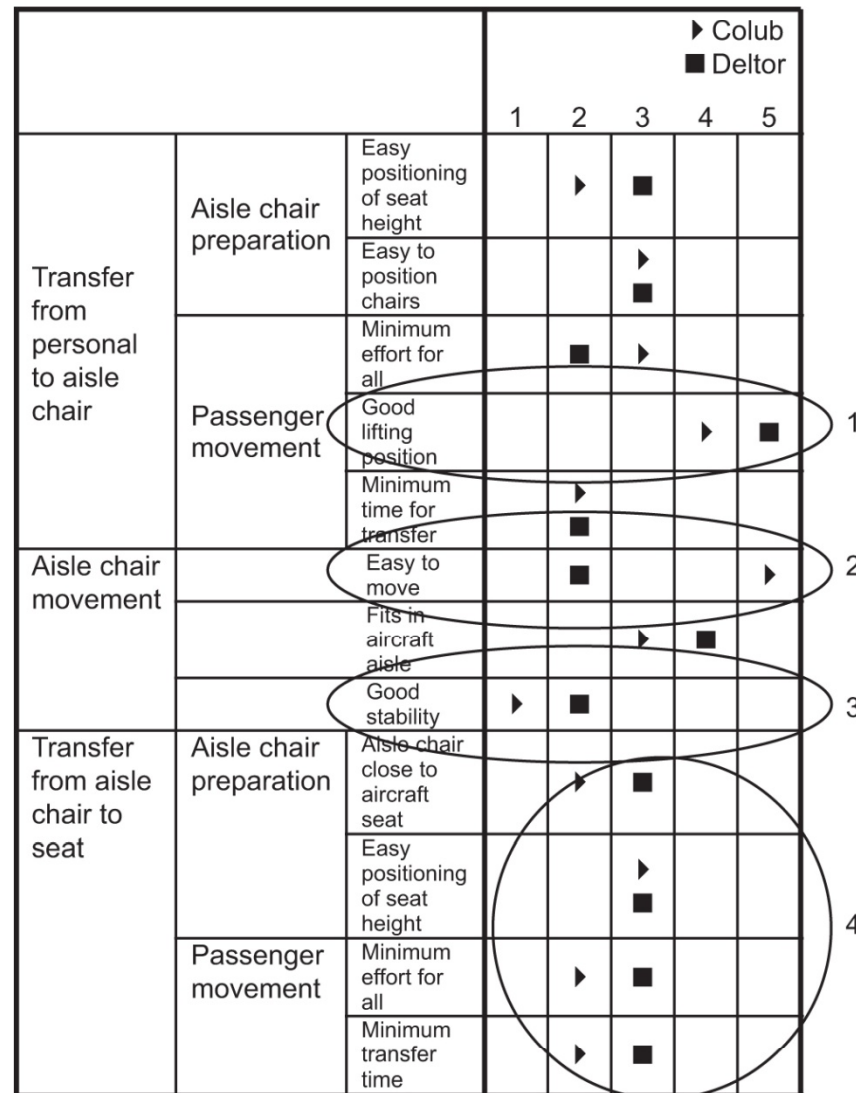
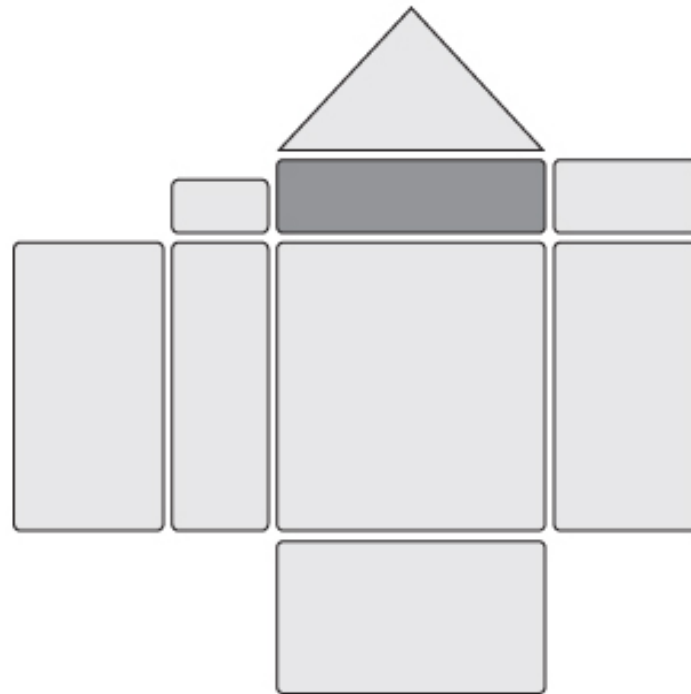


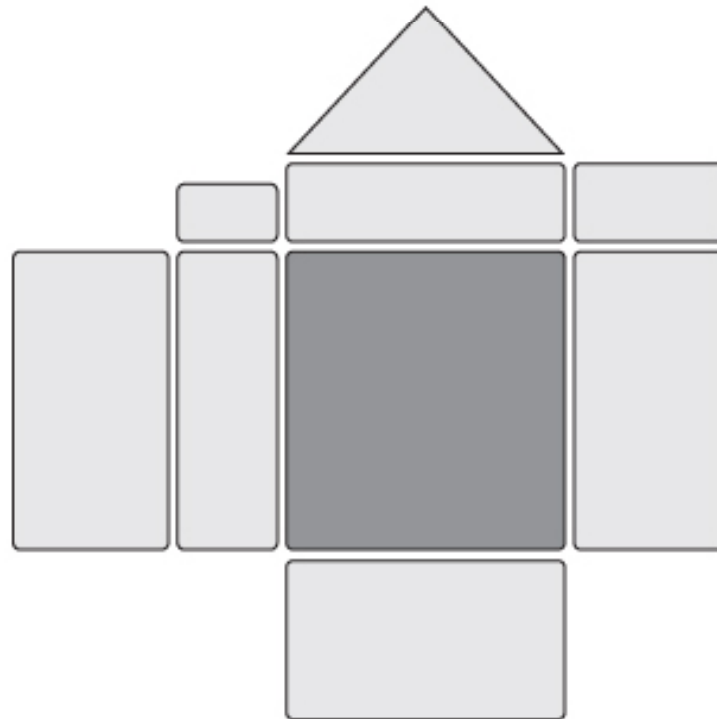
Figure 6.8





**Table 6.1** Types of engineering specifications

Functional performance	Life cycle concerns (continued)
Flow of energy	Diagnosability
Flow of information	Testability
Flow of materials	Reparability
Operational steps	Cleanability
Operation sequence	Installability
Human factors	Retirement
Appearance	Resource concerns
Force and motion control	Time
Ease of controlling and sensing state	Cost
Physical requirements	Capital
Physical properties	Unit
Available spatial envelope	Equipment
Reliability	Standards
Mean time between failures	Environment
Safety (hazard assessment)	Manufacturing/assembly requirements
Life cycle concerns	Materials
Distribution (shipping)	Quantity
Maintainability	Company capabilities





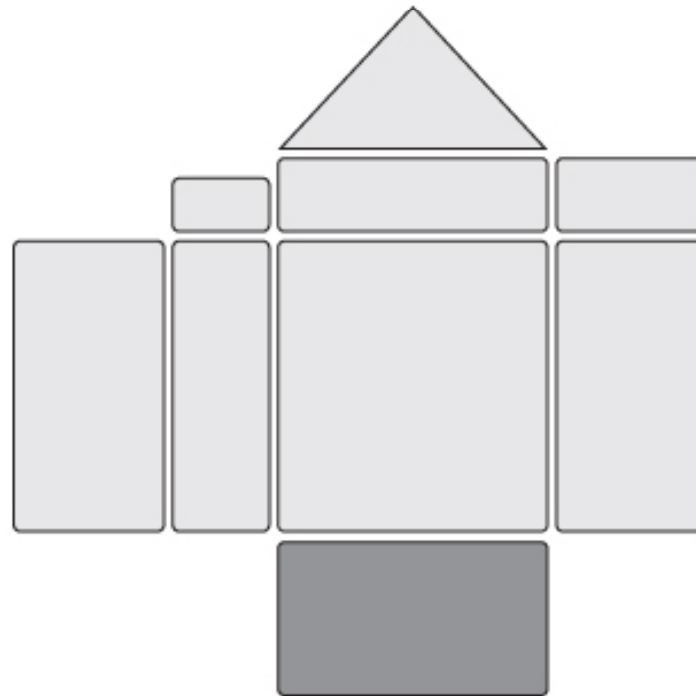
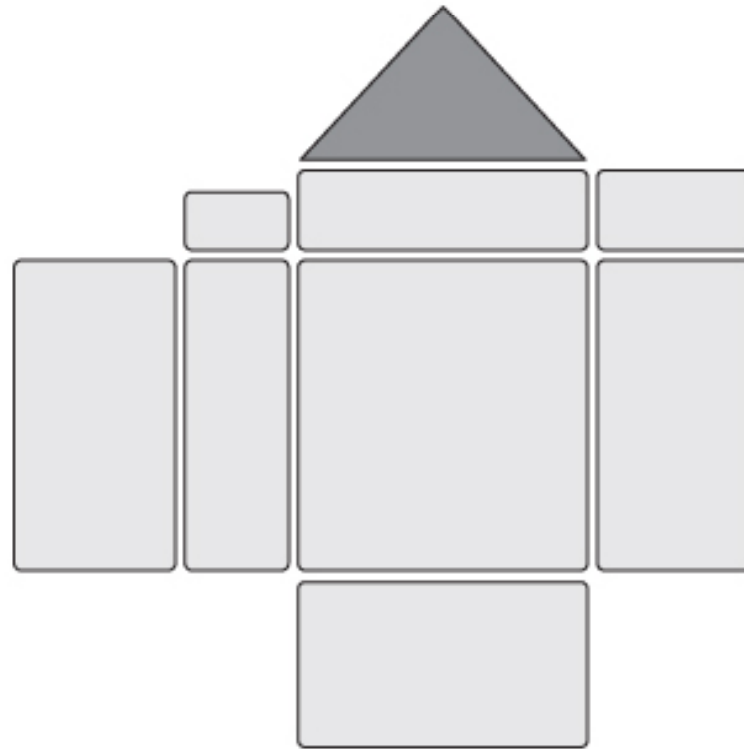


Figure 6.9

What			Who		Seat width relative to frame width
			Passenger	Agent	
					↑ %
Transfer from personal to aisle chair	Aisle chair preparation	Easy positioning of seat height	4	4	⑨
		Easy to position chairs	6	10	
	Passenger movement	Minimum effort for all	15	10	
		Good lifting position	10	12	
		Minimum time for transfer	3	14	①
Aisle chair movement		Easy to move	7	8	
		Fits in aircraft aisle	-	-	
		Good stability	24	10	
Transfer from aisle chair to seat	Aisle chair preparation	Aisle chair close to aircraft seat	6	2	
		Easy positioning of seat height	5	8	⑨
	Passenger movement	Minimum effort for all	15	12	③
		Minimum transfer time	5	10	①

⊙ = 9  
○ = 3  
△ = 1



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