

## List of Figures

	Page
3.1 A flow chart depicting the mixed procedure	30
4.1 The genetic algorithm procedure	37
4.2 (a) Single-point crossover and (b) Two-point crossover	37
4.3 Mutation operation	38
4.4 Plot of number of generations vs. $l_{\max}$ for the $20 \times 20$ problem size (sub-problem: S-2)	44
4.5 Plots of (a) problem size vs. average $l_{\max}$ , and (b) problem size vs. average CPU time	44
5.1 Chromosome encoding	52
6.1 Flow chart of the NHP program	61
6.2 Blank form of machine data	62
6.3 Blank form of noise reduction at the source (NRS) data	62
6.4 Blank form of noise barrier data	63
6.5 Blank form of HPD data	63
6.6 Blank form of noise control project	64
6.7 Heuristic for finding the minimum number of HPDs	67
6.8 Flow chart of the single-approach procedure	68
6.9 Flow Chart of the two-approach procedure	69
6.10 Flow Chart of the three-approach procedure	70
6.11 The main menu of the NHP program	73
6.12 Data entry page of the <i>Input Module</i> of the NHP program	73
6.13 Data entry page of the <i>Solution Algorithms Module</i>	74
6.14 Solution report generated by the <i>NHP Solution Module</i>	74