



Decision Name: Ductless Mini Split Air Conditioner

Project: Use Cases

01. Decision Summary

Due Date	Decision Status	Selected Alternative
2016-05-11	In Progress	Friedrich Floating Air

Objective

The goal is to choose which ductless mini split systems to use.

Collaborators

Doanh Do

02. Alternatives

Friedrich Floating Air

Trane

Fujistu

03. Factors & Criteria

Ease of Installation

Want Criterion : The easier to install the better

Energy Efficiency

Want Criterion : The more energy efficient the better

Noise

Want Criterion : The less noisy the better

Labor for Electrical Lines

Want Criterion : Prefer not to have to run electrical lines

Air Filter Quality

Want Criterion : The better the allergen filter the better

Aesthetics of Indoor Units

Want Criterion : Prefer the most aesthetically pleasing design

Warranty

Want Criterion : The longer the warranty the Better

04. Attributes

Ease of Installation

Friedrich Floating Air: Easy to Install

Met meet must criterion ✓

Fujistu : Easy to Install

Met meet must criterion ✓

Trane: Easy to Install

Met meet must criterion ✓

Energy Efficiency

Friedrich Floating Air: 16 SEER

Met meet must criterion ✓

Fujistu : 18 SEER

Met meet must criterion ✓

Trane: 22 SEER

Met meet must criterion ✓

Noise

Friedrich Floating Air: 30 Decibel

Met meet must criterion ✓

Fujistu : 42 Decibel

Met meet must criterion ✓

Trane: 40 Decibel

Met meet must criterion ✓

Labor for Electrical Lines

Friedrich Floating Air: Uses 110V so minimal effort with electricity line

Met meet must criterion ✓

Fujistu : Uses 110V so minimal effort with electricity line

Met meet must criterion ✓

Trane: Uses 220V so need to run dedicate electricity line

Met meet must criterion ✓

Air Filter Quality

Friedrich Floating Air: High Quality Air Filter

Met meet must criterion ✓

Fujistu : High Quality Air Filter

Met meet must criterion ✓

Trane: High Quality Air Filter

Met meet must criterion ✓

Aesthetics of Indoor Units

Friedrich Floating Air: Most beautiful

Met meet must criterion ✓

Fujistu : Very beautiful

Met meet must criterion ✓

Trane: Beautiful

Met meet must criterion ✓

Warranty

Friedrich Floating Air: 5 years

Met meet must criterion ✓

Fujitsu : 5 years

Met meet must criterion ✓

Trane: 5 years

Met meet must criterion ✓

05. Advantages

Ease of Installation

Want Criterion : The easier to install the better

Easy to Install	Advantage: None	Least Preferred Attribute	✗
Easy to Install	Advantage: None		
Easy to Install	Advantage: None		

Energy Efficiency

Want Criterion : The more energy efficient the better

16 SEER	Advantage: None	Least Preferred Attribute	✗
18 SEER	Advantage: 2 more SEER		
22 SEER	Advantage: 6 more SEER	Most Important Advantage	★

Noise

Want Criterion : The less noisy the better

30 Decibel	Advantage: 12 fewer decibel	Most Important Advantage	★
42 Decibel	Advantage: None	Least Preferred Attribute	✗
40 Decibel	Advantage: 2 fewer decibel		

Labor for Electrical Lines

Want Criterion : Prefer not to have to run electrical lines

Uses 110V so minimal effort with electricity line	Advantage: no need for electrical line	Most Important Advantage	★
Uses 110V so minimal effort with electricity line	Advantage: no need for electrical line		
Uses 220V so need to run dedicate electricity line	Advantage: None	Least Preferred Attribute	✗

Air Filter Quality

Want Criterion : The better the allergen filter the better

High Quality Air Filter	Advantage: None		
High Quality Air Filter	Advantage: None		

High Quality Air Filter

Advantage: None

Least Preferred Attribute ✘

Aesthetics of Indoor Units

Want Criterion : Prefer the most aesthetically pleasing design

Most beautiful Advantage: most beautiful vs. beautiful Most Important Advantage ★

Very beautiful Advantage: very beautiful vs. beautiful

Beautiful Advantage: None Least Preferred Attribute ✘

Warranty

Want Criterion : The longer the warranty the Better

5 years Advantage: None Least Preferred Attribute ✘

5 years Advantage: none

5 years Advantage: none

06. Importance of Advantages

Ease of Installation

Want Criteria : The easier to install the better

Alternative	Attribute	Advantage	Weight of Advantage
Friedrich Floating Air	Easy to Install	None	
Fujistu	Easy to Install	None	0
Trane	Easy to Install	None	0

Energy Efficiency

Want Criteria : The more energy efficient the better

Alternative	Attribute	Advantage	Weight of Advantage
Friedrich Floating Air	16 SEER	None	
Fujistu	18 SEER	2 more SEER	43
Trane	22 SEER	6 more SEER	64

Noise

Want Criteria : The less noisy the better

Alternative	Attribute	Advantage	Weight of Advantage
Friedrich Floating Air	30 Decibel	12 fewer decibel	60
Fujistu	42 Decibel	None	
Trane	40 Decibel	2 fewer decibel	47

Labor for Electrical Lines

Want Criteria : Prefer not to have to run electrical lines

Alternative	Attribute	Advantage	Weight of Advantage
Friedrich Floating Air	Uses 110V so minimal effor...	no need for electrical line	82
Fujistu	Uses 110V so minimal effor...	no need for electrical line	82
Trane	Uses 220V so need to run d...	None	

Air Filter Quality

Want Criteria : The better the allergen filter the better

Alternative	Attribute	Advantage	Weight of Advantage
Friedrich Floating Air	High Quality Air Filter	None	0
Fujistu	High Quality Air Filter	None	0
Trane	High Quality Air Filter	None	

Aesthetics of Indoor Units

Want Criteria : Prefer the most aesthetically pleasing design

Alternative	Attribute	Advantage	Weight of Advantage
Friedrich Floating Air	Most beautiful	most beautiful vs. beautiful	100*
Fujistu	Very beautiful	very beautiful vs. beautiful	68
Trane	Beautiful	None	

* *Paramount Advantage*

Warranty

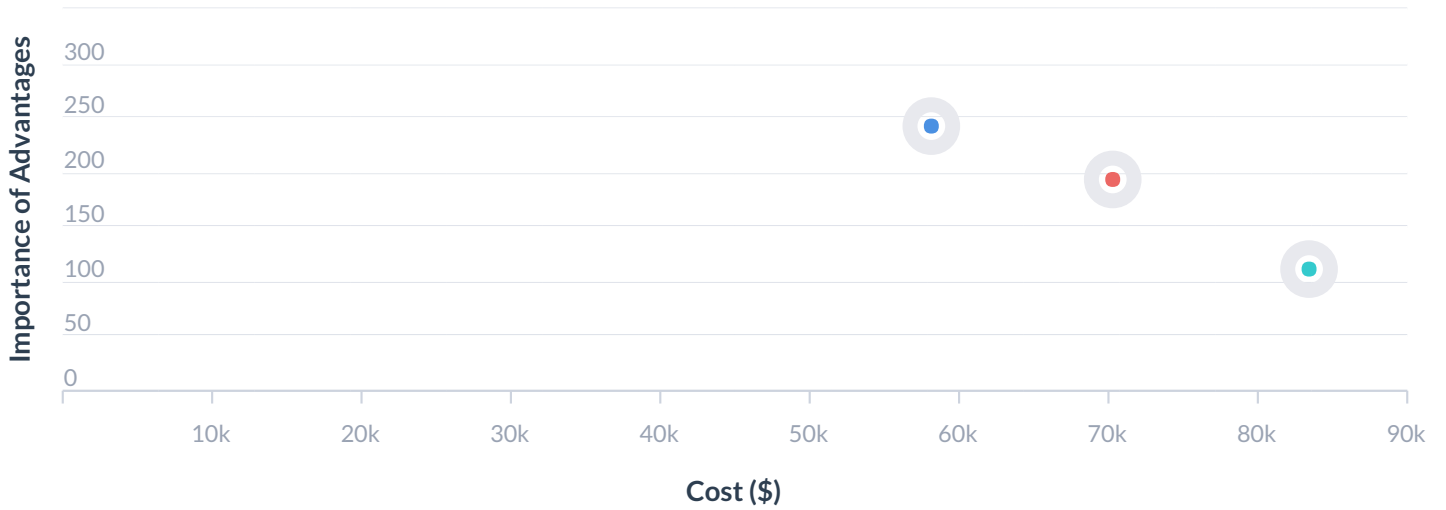
Want Criteria : The longer the warranty the Better

Alternative	Attribute	Advantage	Weight of Advantage
Friedrich Floating Air	5 years	None	
Fujistu	5 years	none	0
Trane	5 years	none	0

07. Costs

Alternative	--	--	Electricity	Labor	Product Cost	Total*
Friedrich Flo...	\$0.00	\$0.00	\$23,444.00	\$18,700.00	\$16,000.00	\$58,144.00
Trane	\$0.00	\$0.00	\$40,300.00	\$23,600.00	\$19,500.00	\$83,400.00
Fujitsu	\$0.00	\$0.00	\$34,440.00	\$18,700.00	\$17,200.00	\$70,340.00

Importance of Advantages vs. Cost Graph



Alternative	Importance of Advantages	Cost
1 Friedrich Floating Air	242	\$58,144.00
2 Trane	111	\$83,400.00
3 Fujistu	193	\$70,340.00

Selected Alternative	Importance of Advantages	Life Cycle Cost
Friedrich Floating Air	242	\$58,144.00

Final Notes

Last Modified

May 29, 2016, 5 a.m.