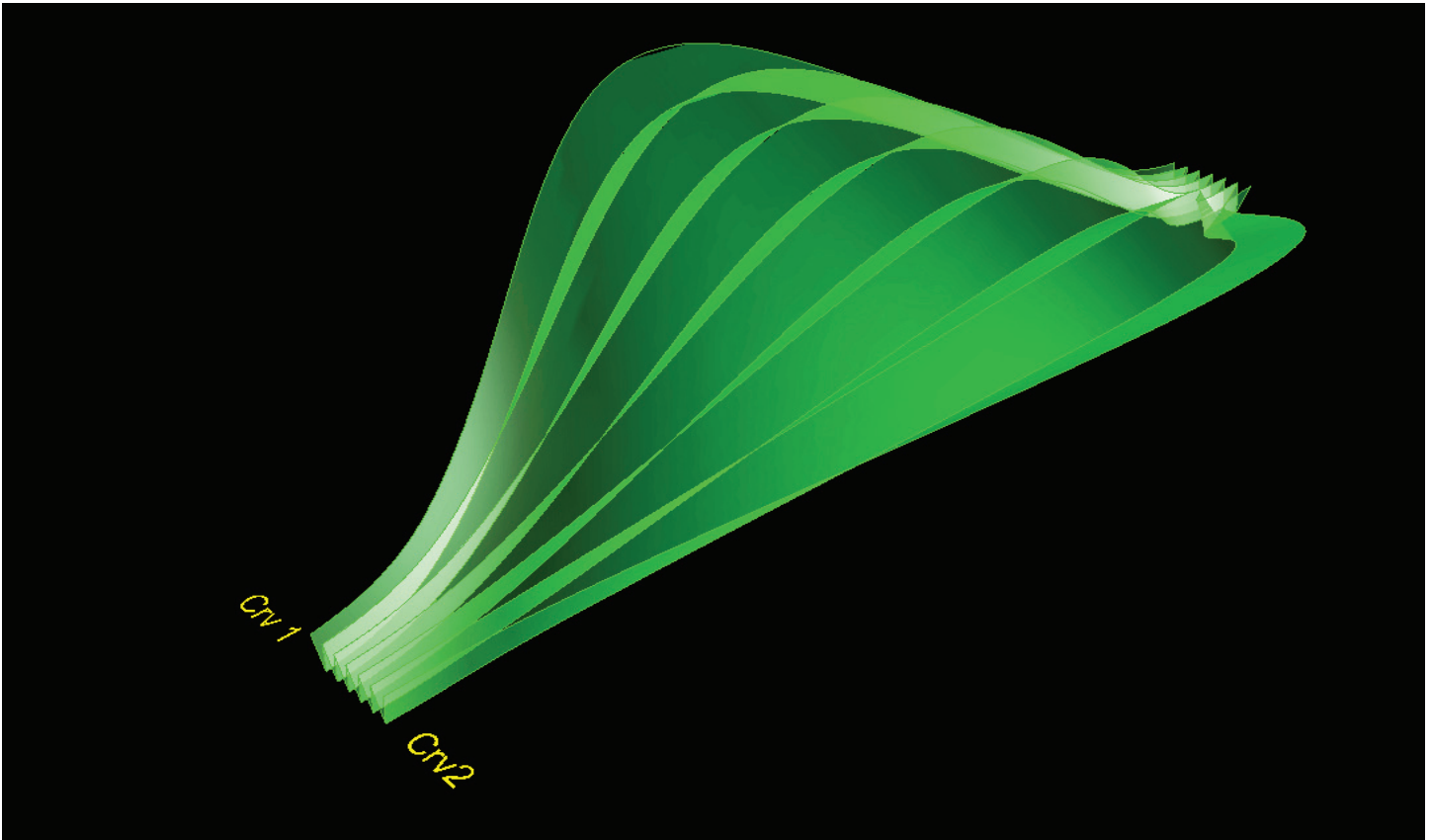
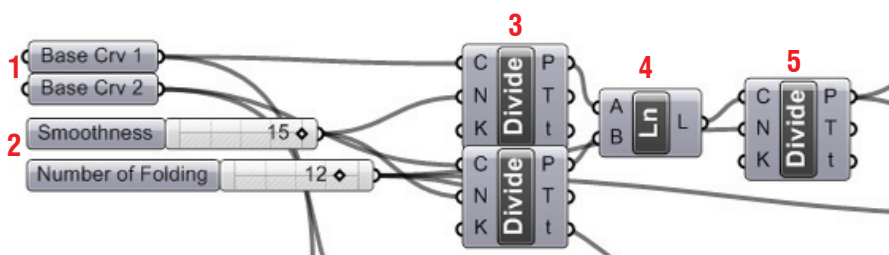
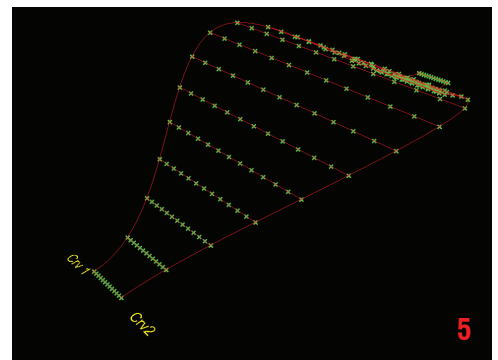
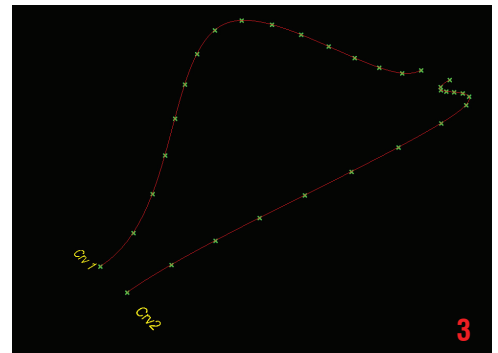


4_1 HORIZONTAL FOLDING



Step1 : Points Grid from Curves

1. **Curve** (Params/Geometry/Curve) x 2 : “Base Crv 1”, “Base Crv 2”
 - Draw two free curves in Rhino scene
 - Right Click and Set One curve for each : click the target curve in Rhino scene
2. **Slider** x 2 (Params/Special/Number Slider)
 - “Smoothness” : Integers, Lower limit=0, Upper limit=15, Value=15
 - “Number of Folding” : Even numbers, Lower limit=0, Upper limit=20, Value=12
3. **Divide** (Curve/Division/Divide Curve) x 2
 - C : Curve(“Base Crv 1”) / N : Slider “Smoothness”
 - C : Curve(“Base Crv 2”) / N : Connect Slider “Smoothness” to N
4. **Ln** (Curve/Primitive/Line)
 - A : Divide(P)
 - B : Divide(P)
5. **Divide** (Curve/Division/Divide Curve)
 - Connect Ln to C / Connect Slider “Number of Folding” to N



Step2 : Connecting Points by Switching U and V

6. **Cull** (Logic/Sets/Cull Pattern)

- L : *Divide*(P)
- P : Right Click and Manage Boolean Collection : **True/False -> point group A**

7. **Cull** (Logic/Sets/Cull Pattern)

- L : *Divide*(P)
- P : Right Click and Manage Boolean Collection : **False/True -> point group B**

8. **Simplify** (Logic/Tree/Simplify Tree) x 2 for each group

- T : *Cull* (L)
- * This is necessary for organizing existing Data Tree

9. **Param Viewer** (Params/Special/Param Viewer) x 2 for each group

- *Simplify* (T) as Input

10. **F1** (Logic/Script/F1) x 2 for each group

- F : Right Click and put " $1/2 * x$ " / Right and put " $1/2 * x - 1$ "
- x : *Slider* "Number of Folding" to both x

11. **Range** (Logic/Sets/Range) x 2 for each group

- D and N : Connect *F1* (r) to both D and N

12. **Graft** (Logic/Tree/Graft Tree) x 2 for each group

- D : *Range* (R) to D

13. **Item** (Logic/Tree/Tree Item) x 2 for each group

- T : *Simplify* (T) to T
- P : *Param Viewer* to P
- i : *Graft* (T) to i

14. **Slider** (Params/Special/Number Slider)

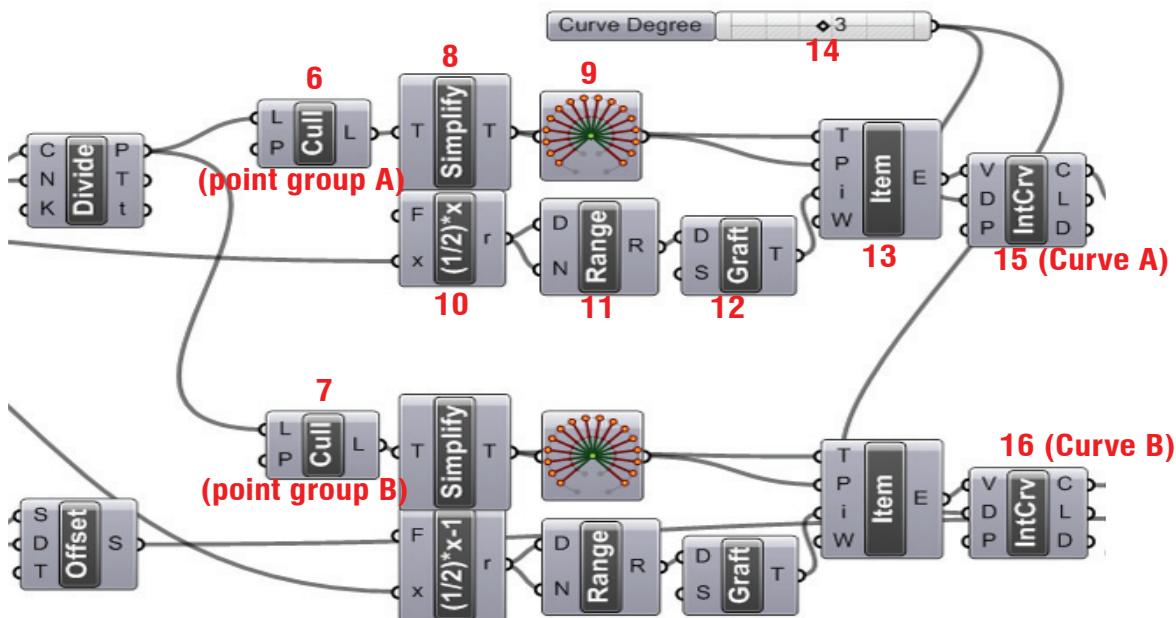
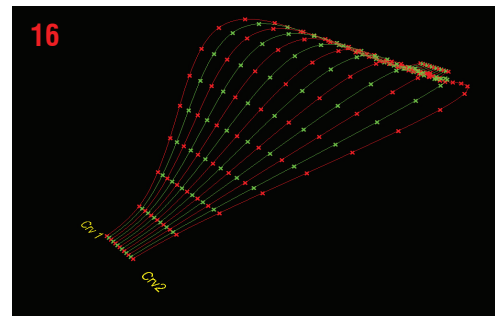
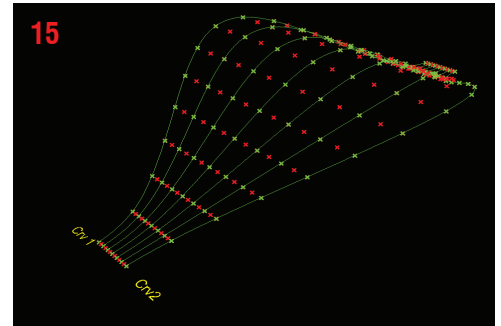
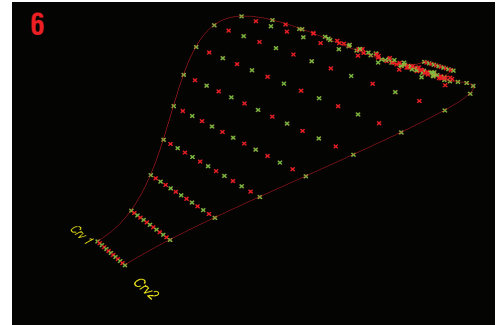
- "Curve Degree" : Odd numbers, Lower limit=1, Upper limit=5, Value=3

15. **IntCrv** (Curve/Spline/Interpolate) -> **curve A**

- V : *Item* (E) to T
- D : *Slider* ("Curve Degree")

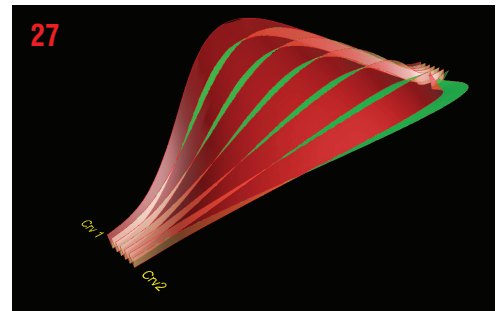
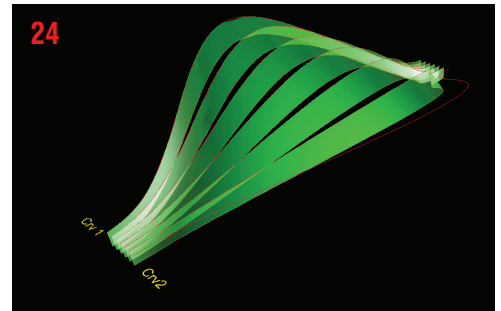
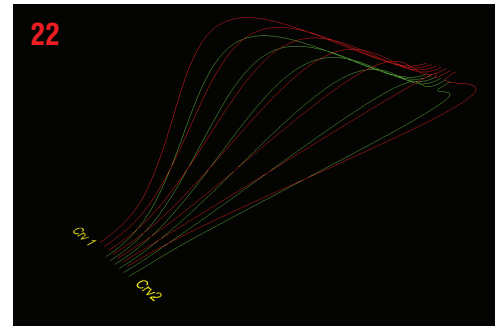
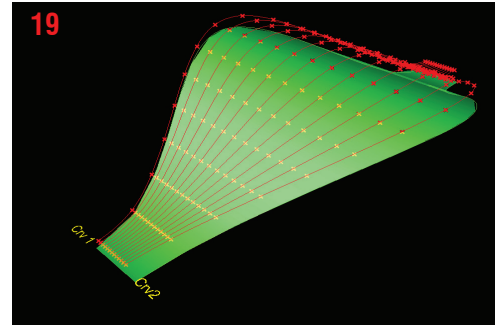
16. **IntCrv** (Curve/Spline/Interpolate) -> **curve B**

- V : *Item* (E) to T
- D : *Slider* ("Curve Degree")

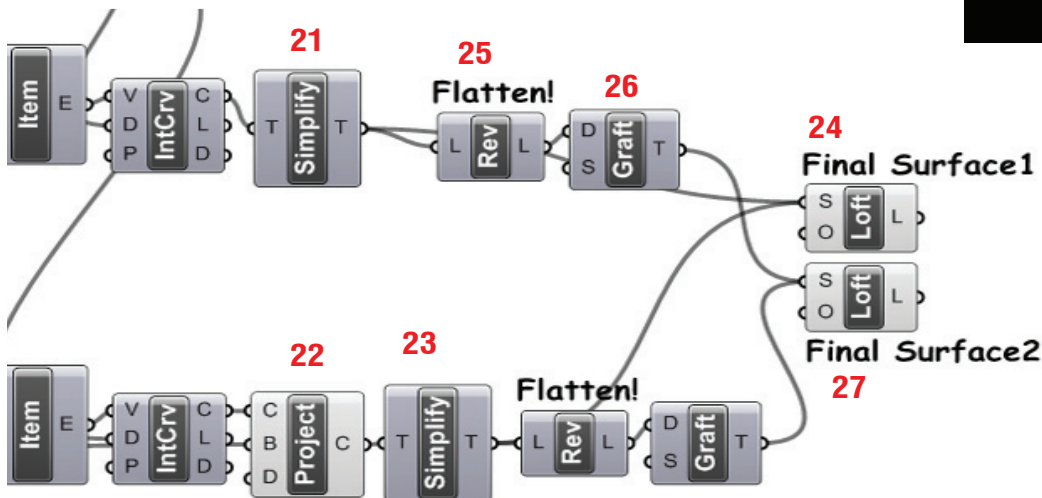


Step3 : Making Surface

- 17. **Offset** (Curve/Util/Offset) x 2
 - C : Two Curve ("Base Crv 1", "Base Crv 2") to (C)
 - D : Right click and set number : 1.0
- 18. **Slider** (Params/Special/Number Slider)
 - "Depth of Folding" : Integers, Lower limit=-3, Upper limit=3, Value=-2
- 19. **Loft** (Surface/Freeform/Loft) -> **base surface for projection**
 - S : two **Offset** to (S)
- 20. **Offset** (Surface/Freeform/Offset)
 - S : **Loft** (L) to (S)
 - D : **Slider** ("Depth of Folding") to (D)



- 21. **Simplify** (Logic/Tree/Simplify Tree)
 - T : **IntCrv**(C) (**curve A**)
- 22. **Project** (Curve/Util/Project)
 - C : **IntCrv**(C) (**curve B**)
 - B : connect **Loft** (**base surface**)
- 23. **Simplify** (Logic/Tree/Simplify Tree)
 - T : **Project**(C)
- 24. **Loft** (Surface/Freeform/Loft) -> **Final Surface 1**
 - S : Two **Simplify** to (S)
- 25. **Reverse List** (Logic/List/Reverse List) x 2 for each
 - T : **Simplify** (T)
 - Right click and "Flatten"
- 26. **Graft** (Logic/Tree/Graft Tree) x 2 for each
 - D : **Rev** (L) to (D)
- 27. **Loft** (Surface/Freeform/Loft) -> **Final Surface 2**
 - S : two **Graft**(T) to (S)



Appendix
- Definition map

