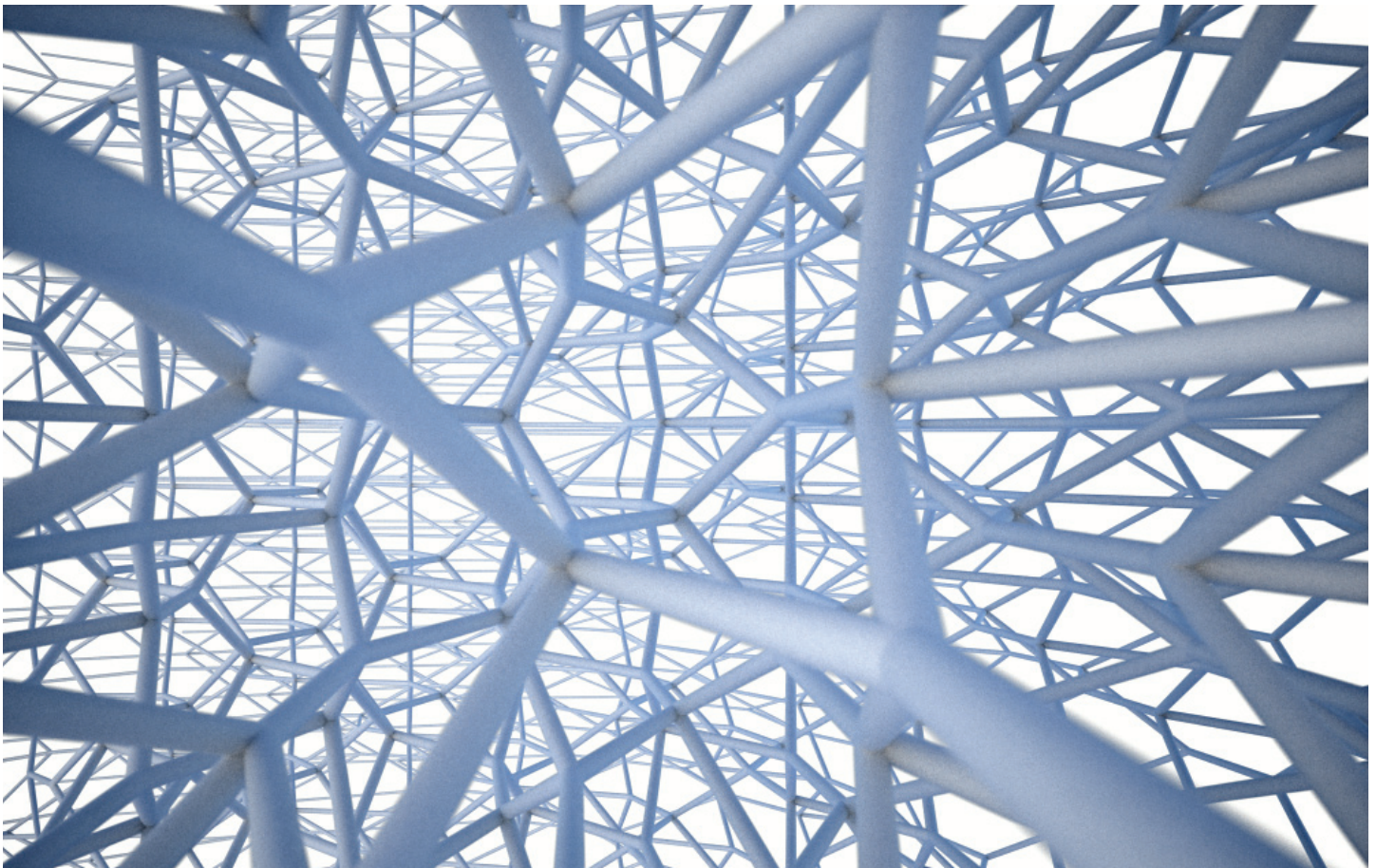
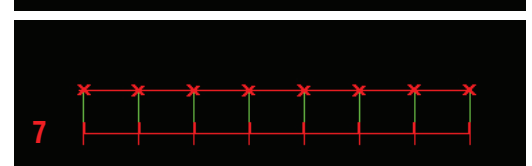
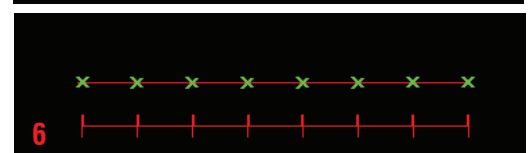
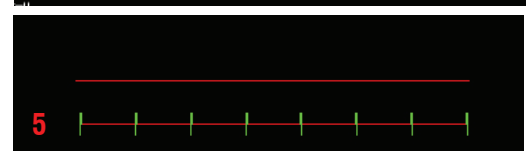
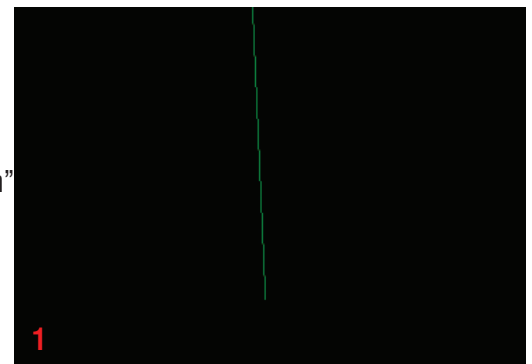


6_5 3D Hexagonal Frame



Step1 : Parametric Planes on Axis Curves

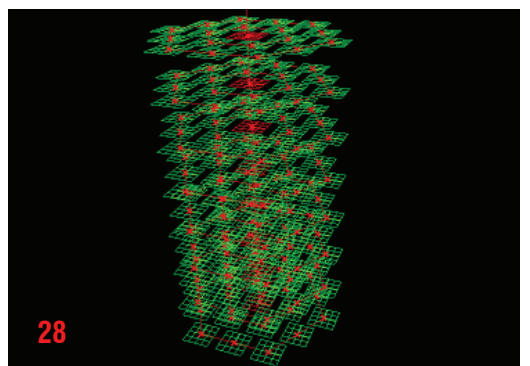
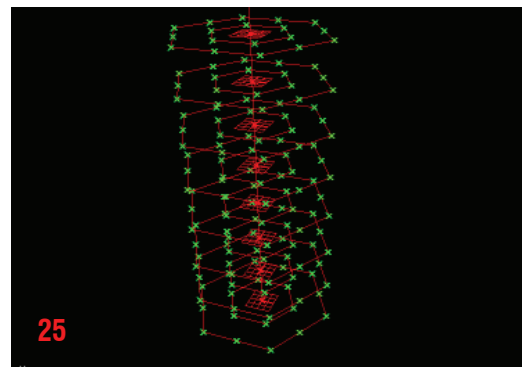
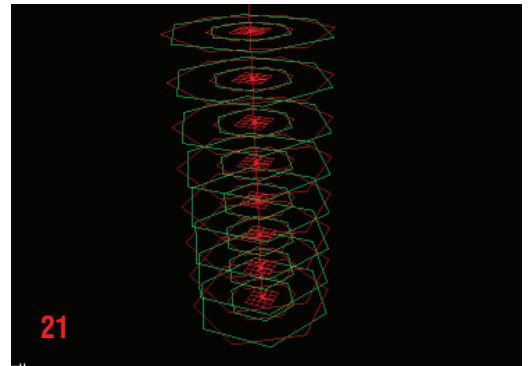
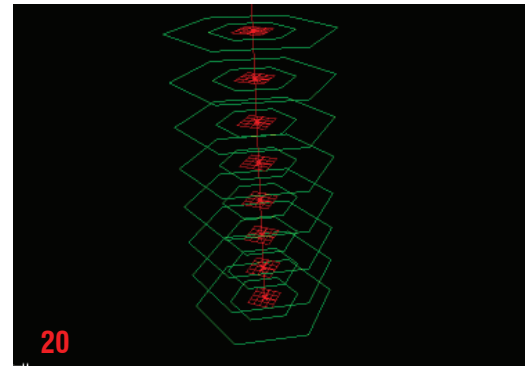
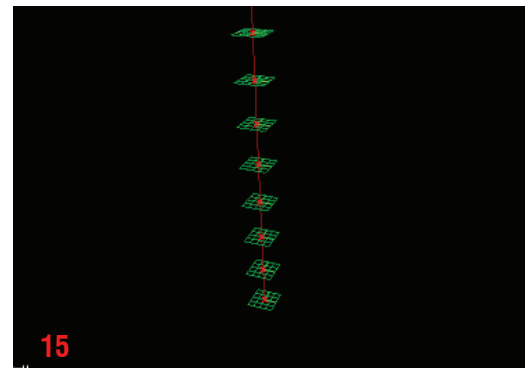
1. **Curve** (Params/Geometry/Curve) : "Axis Curve"
 - Draw one Rhino Curve 3d space
 - Right click and Set One Curve
2. **Curve** (Params/Geometry/Curve) : "Radius Profile on Section"/ "Axis on Section"
 - Draw two Rhino Curve on y-z plane (on Right view) : top and bottom
 - Right click and Set One Curve for each one
 - > Top curve is supposed to use for controlling Form with Radius on section
3. **Slider** (Params/Special/Number Slider)
 - "Number of Tessellation" : Integer, Lower limit=0, Upper limit=5, Value=2
 - "Radius Amplifier" : Floating point, Lower limit=0, Upper limit=5, Value=1.5
4. **F(x)** (Logic/Script/F1)
 - F : Expression Editor : $4*x-1$
 - x : Slider "Number of Tessellation"
5. **Pframes** (Curve/Division/Perp Frames)
 - C : Curve "Axis on Section"
 - N : F(x)
6. **PCX** (Intersect/Mathematical/Curve | Plane)
 - C : Curve "Radius Profile on Section"
 - P : PFrame(F)
7. **Ln** (Curve/Primitive/Line)
 - A : PCX(P)
 - B : Pframes(F)



- 8. **Len** (Curve/Analysis/Length)
 - C : $Ln(L)$
- 9. **Range** (Logic/Sets/Range)
 - D : $F(x)$
 - N : $F(x)$
- 10. **Shift** (Logic/List/Shift List)
 - L : $Len(L)$
 - S : $Range(R)$
- 11. **MA** (Scalar/Util/Mass Addition)
 - I : $Shift(L)$
- 12. **MA** (Scalar/Util/Mass Addition)
 - I : $Len(L)$
- 13. **Div** (Scalar/Operator/Division)
 - A : 11. $MA(R)$
 - B : 12. $MA(R)$
- 14. **Eval** (Curve/Analysis/Evaluate Length)
 - C : Curve "Axis Curve"
 - L : $Div(R)$
 - N : $True$
- 15. **PI** (Vector/Plane/Plane Normal)
 - O : $Eval(P)$
 - Z : $Eval(T)$

Step2 : Hexagonal Tessellation on Each Planes

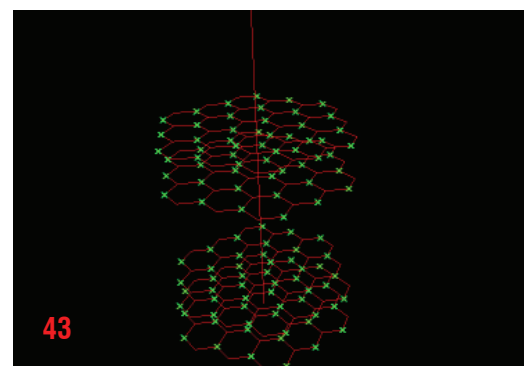
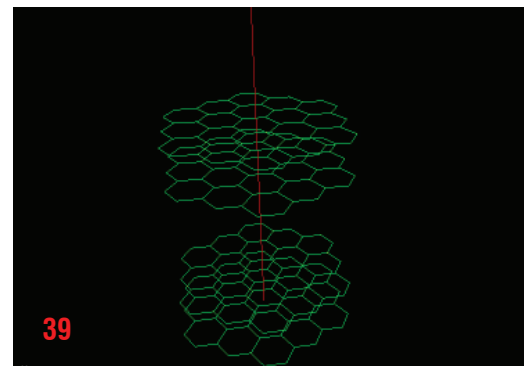
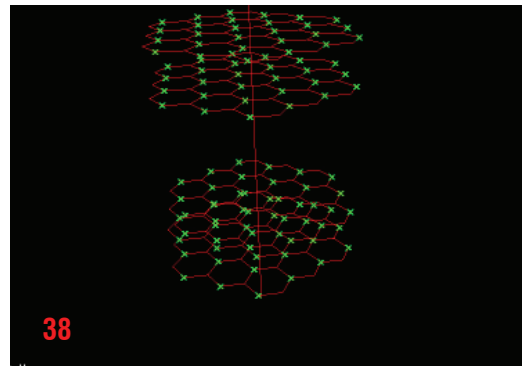
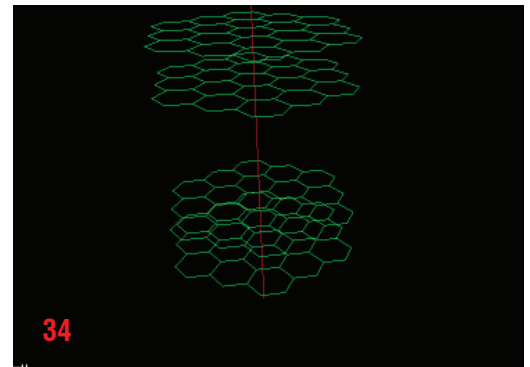
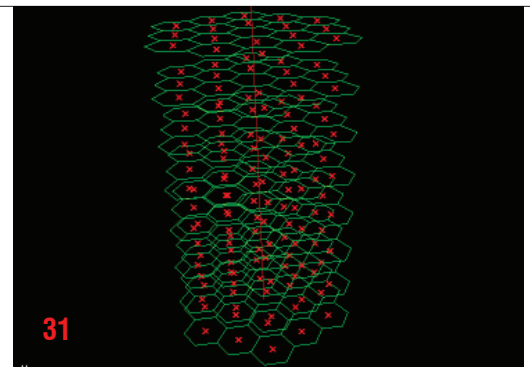
- 16. **Mult** (Scalar/Operator/Multiplication)
 - A : $Len(L)$
 - B : *Slider* "Radius Amplifier"
- 17. **Graft** (Logic/Tree/Graft Tree)
 - D : $Mult(R)$
- 18. **Range** (Logic/Sets/Range)
 - D : $Graft(T)$
 - N : *Slider* "Number of Tessellation"
- 19. **Shift** (Logic/List/Shift List)
 - L : $Range(R)$
 - S : Integer = 1
- 20. **HexGrid** (Vector/Grids/Hexagonal)
 - P : $PI(P)$
 - S : $Shift(L)$
- 21. **Rotate** (Vector/Grids/Hexagonal)
 - G : $HexGrid(C)$
 - A : number = $Pi/6$
 - P : 15.PI(P)
- 22. **Range** (Logic/Sets/Range)
 - D : *Slider* "Number of Tessellation"
 - N : *Slider* "Number of Tessellation"
- 23. **Mult** (Scalar/Operator/Multiplication)
 - A : $Range(R)$
 - B : Integer = 6
- 24. **Shift** (Logic/List/Shift List)
 - L : $Mult(R)$
 - S : Integer = 1



- 25. **Divide** (Curve/Division/Divide Curve)
 - C : 21. *Rotate(G)*
 - N : 24. *Shift(L)*
- 26. **Path Mapper** (Logic/Tree/Path Mapper)
 - {A;B;C;D;E;F;G} -> {A;B;C}
- 27. **PI** (Vector/Plane/Plane Normal)
 - O : *Path Mapper*
 - Z : 14. *Eval(T)*
- 28. **Align** (Vector/Plane/Align Planes)
 - P : 27. *PI(P)*
 - M : 15. *PI(P)*
- 29. **Div** (Scalar/Operator/Division)
 - A : 17. *Graft(T)*
 - B : *Slider* "Number of Tessellation"
- 30. **Div** (Scalar/Operator/Division)
 - A : 27. *Div(R)*
 - B : number = $3^{0.5}$
- 31. **HexGrid** (Vector/Grids/Hexagonal)
 - P : 28. *Align(P)*
 - S : 30. *Div(R)*

Step3 : Point Connection for 3D Hexagonal Modules

- < Setting up Points Group1 >
- 32. **Path Mapper** (Logic/Tree/Path Mapper)
 - {A;B;C;D;E;F} -> {B}
- 33. **Path Mapper** (Logic/Tree/Path Mapper)
 - {A}(i) -> {i}(A)
- 34. **Cull** (Logic/Sets/Cull Pattern)
 - L : 33. *Path Mapper*
 - P : False/False/True/True
- 35-1. **Cull** (Logic/Sets/Cull Pattern)
 - L : 34. *Cull(L)*
 - P : False/True
- 35-1-1. **Shift** (Logic/List/Shift List)
 - L : 34-1. *Cull(L)*
 - S : Integer = -1
- 35-2. **Cull** (Logic/Sets/Cull Pattern)
 - L : 34. *Cull(L)*
 - P : True/False
- 36-1. **Explode** (Logic/Sets/Cull Pattern)
 - L : 35-1-1. *Shift(L)*
- 36-2. **Explode** (Logic/Sets/Cull Pattern)
 - L : 35-1. *Cull(L)*
- 36-3. **Explode** (Logic/Sets/Cull Pattern)
 - L : 35-2. *Cull(L)*
- 37-1. **Shift** (Logic/List/Shift List)
 - L : 36-1. *Explode(V)*
 - S : Integer = 1
- 37-2. **Shift** (Logic/List/Shift List)
 - L : 36-2. *Explode(V)*
 - S : Integer = 1



37-3. **Shift** (Logic/List/Shift List)

- L : 36-3. *Explode(V)*

- S : Integer = 1

38-1. **Cull** (Logic/Sets/Cull Pattern)

- L : 37-1. *Shift(L)*

- P : True/False

38-2. **Cull** (Logic/Sets/Cull Pattern)

- L : 37-2. *Shift(L)*

- P : True/False

38-3. **Cull** (Logic/Sets/Cull Pattern)

- L : 37-3. *Shift(L)*

- P : True/False

< Setting up Points Group2 >

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

- L : 33. *Path Mapper*

- P : True/True/False/False

40-1. **Cull** (Logic/Sets/Cull Pattern)

- L : 39. *Cull(L)*

- P : False/True

40-2. **Cull** (Logic/Sets/Cull Pattern)

- L : 39. *Cull(L)*

- P : True/False

40-2-1. **Shift** (Logic/List/Shift List)

- L : 40-2. *Cull(L)*

- S : Integer = 1

41-1. **Explode** (Logic/Sets/Cull Pattern)

- L : 40-1. *Cull(L)*

41-2. **Explode** (Logic/Sets/Cull Pattern)

- L : 40-2. *Cull(L)*

41-3. **Explode** (Logic/Sets/Cull Pattern)

- L : 40-2-1. *Cull(L)*

42-1. **Shift** (Logic/List/Shift List)

- L : 41-1. *Explode(V)*

- S : Integer = 1

42-2. **Shift** (Logic/List/Shift List)

- L : 41-2. *Explode(V)*

- S : Integer = 1

42-3. **Shift** (Logic/List/Shift List)

- L : 41-3. *Explode(V)*

- S : Integer = 1

43-1. **Cull** (Logic/Sets/Cull Pattern)

- L : 42-1. *Shift(L)*

- P : False/True

43-2. **Cull** (Logic/Sets/Cull Pattern)

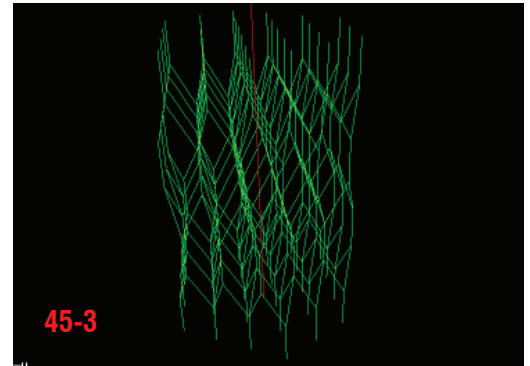
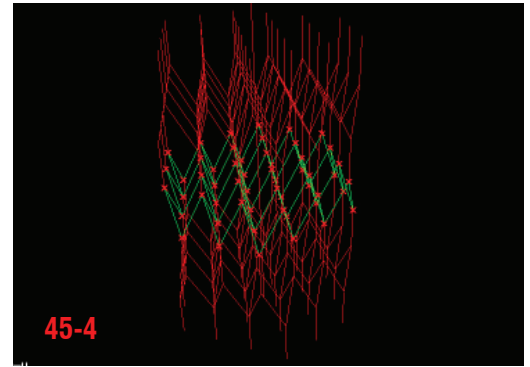
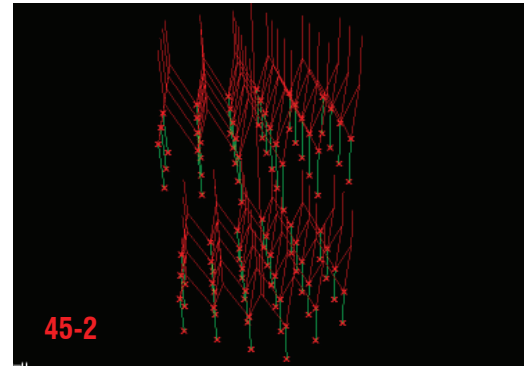
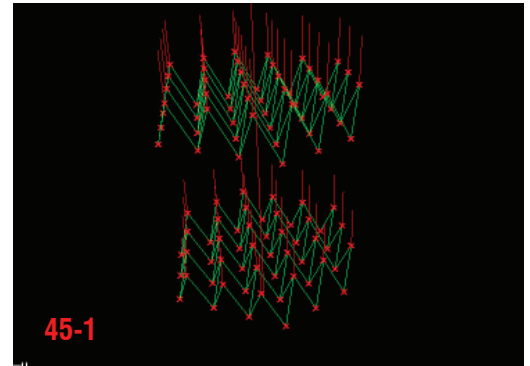
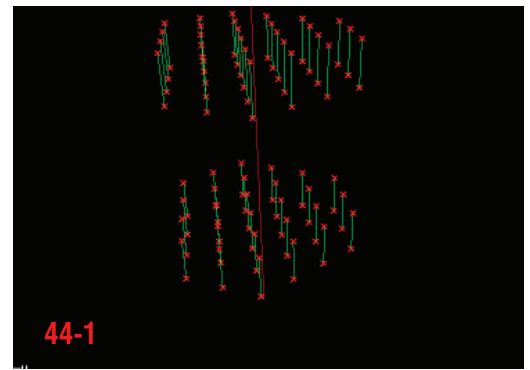
- L : 42-2. *Shift(L)*

- P : False/True

43-3. **Cull** (Logic/Sets/Cull Pattern)

- L : 42-3. *Shift(L)*

- P : False/True



< Points Connection >

44-1. **Ln** (Curve/Primitive/Line)

- A : 38-3. **Cull**(L)

- B : 43-1. **Cull**(L)

44-2. **Ln** (Curve/Primitive/Line)

- A : 38-1. **Cull**(L)

- B : 43-3. **Cull**(L)

45-1. **Ln** (Curve/Primitive/Line)

- A : 38-2. **Cull**(L)

- B : 38-3. **Cull**(L)

45-2. **Cull** (Logic/Sets/Cull Pattern)

- L : 44-1. **Ln**(L)

- P : True/True/False/False/True/True/True/False/True

45-3. **Cull** (Logic/Sets/Cull Pattern)

- L : 44-2. **Ln**(L)

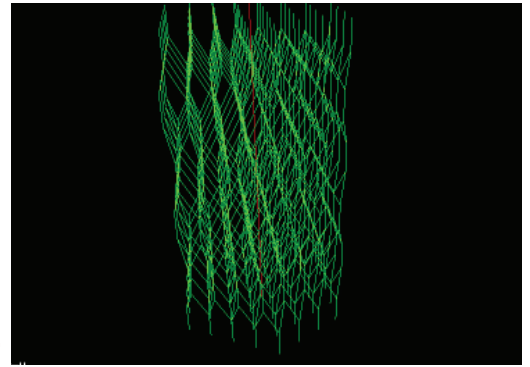
- P : True/True/False/False/True/True/True/False/True

45-4. **Ln** (Curve/Primitive/Line)

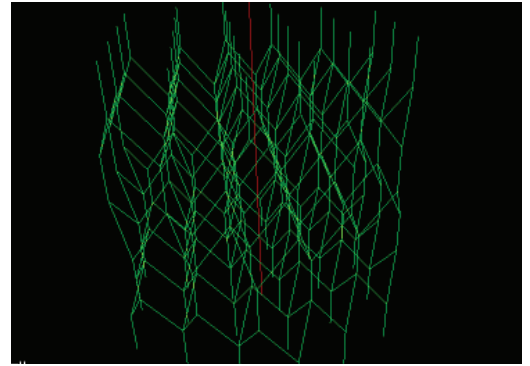
- A : 43-1. **Cull**(L)

- B : 43-2. **Cull**(L)

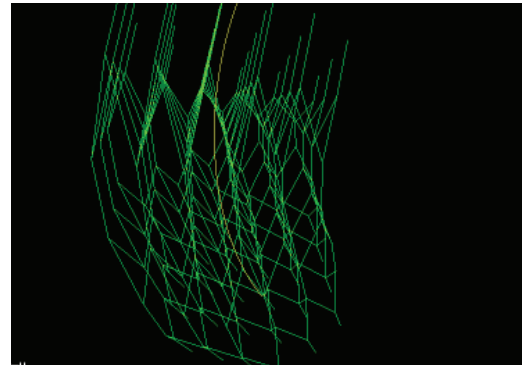
* Number of Tessellation = 3



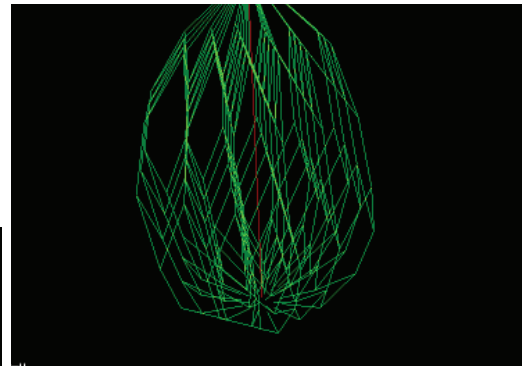
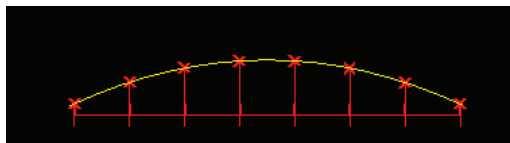
* Radius Amplifier x 2



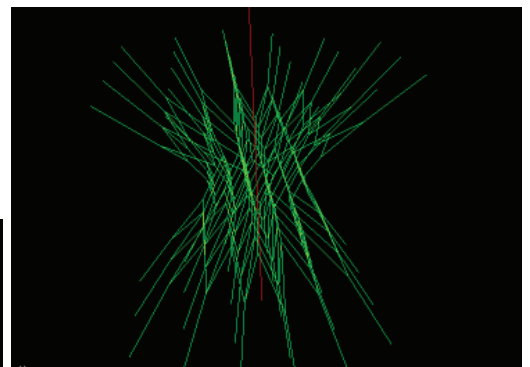
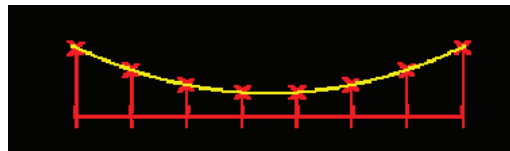
* Change of Axis Curve



* Radius Profile Change 1



* Radius Profile Change



Appendix
- Definition map 1

