

# GT STUDIO

## I GOT YOUR PROBLEM RIGHT HERE

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**Project Name** Standing Seam Metal Roofing Constraint

**Project Description** (How are you going about it now? How would you like to approach it differently? What type of materials are you using now?)

This project is somewhat simple yet complex geometry that has applications to many other types of design problems. The premise is that we as designers and educators would like to develop digital methods for using conventional construction methods and materials in unconventional form-making. In this case to define a parametric model using typical standing seam metal roofing, and typical standing seam metal roofing clips to define a tessellated surface. This construction method cannot make any surface that we desire but can make a particular set. The idea is that we could create a GT model which would show us what the limits of the construction method are. This type of modelling constraint could have applications to many different pre-defined construction methods.

We attempted to model this many different ways and many different times. We began by defining a simple surface and attempting to define the same geometric constraints of the standing seam along surface. This method theoretically works, but is slightly inaccurate, we loose a couple of percent of the distance on each piece, rendering the system useless when we have more than a few strips of metal.

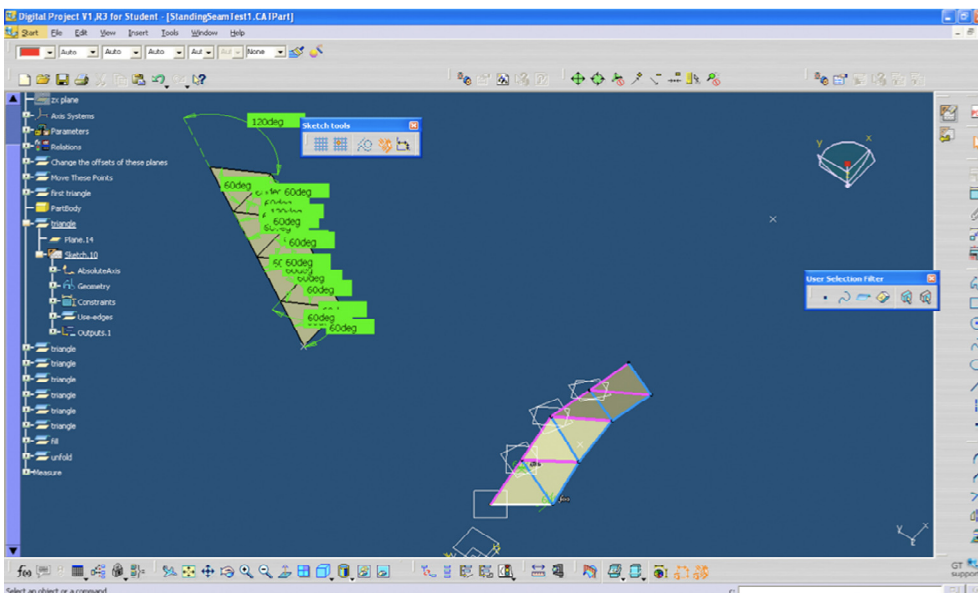
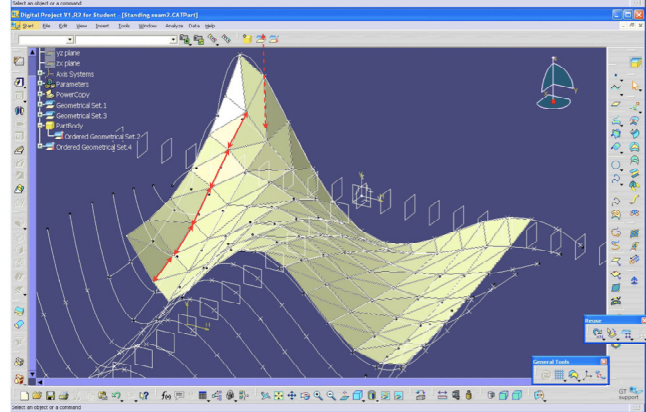
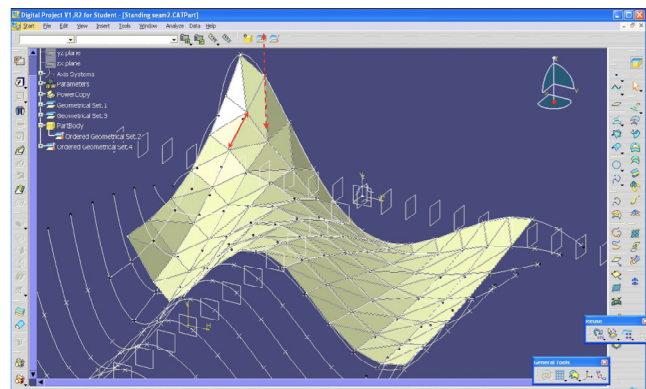
We also attempted to unroll and "re-roll" the pattern of the tessellation onto strips of metal cut from a surface. This didn't work. We have also tried to model the constraints onto a single strip and then instantiate that strip across the surface, this wasn't as flexible as we had hoped. We would love the opportunity to discuss alternative ways for solving this problem. Thank you in advance for your consideration.

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Model starting with 2 sketch curve surface. This scheme was attempting to define the limitations and geometry of the tessellated standing seam roofing to a given surface. This one was very close but loses accuracy as you continue down the line. Inaccuracy was typically 1-3% of actual lengths.



This Scheme was an attempt to define the geometric constraints to one strip of standing seam metal roofing but it was too tightly constrained, and couldn't accommodate any type of complex surface.