

R8 Waveguide Installation and Infrastructure

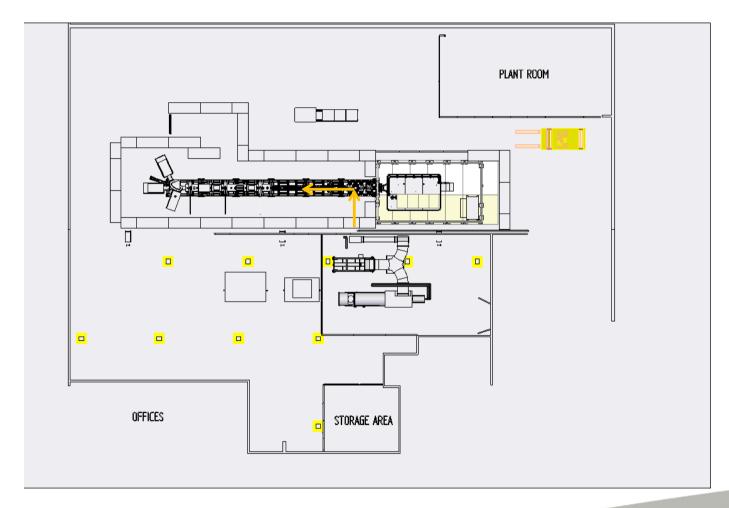
By Michael Dudman 12th June 2013

Waveguide Questions

- What is the best option for waveguide route
- How will entry through shielding be achieved in either option, does this impact on NELCO's Design
- How will the transition from waveguide to RFQ be done, do we have the height?



Layout decided at last FETS meeting



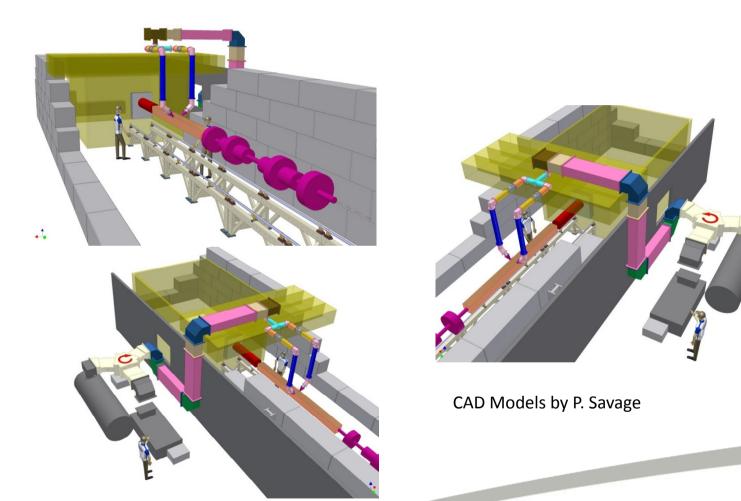


Wave Guide Route 3 Requirements

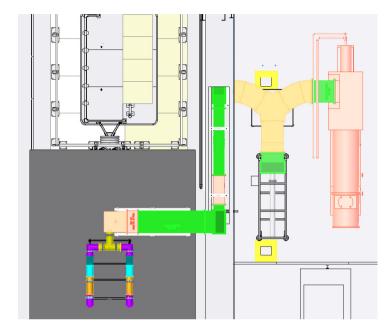
- Minimal Klystron move
- No need for dummy load modifications
- Waveguide run inside partition wall
- Access through partition at shield roof level
- Minimal / no coax run reducing RF losses
- Transition between waveguide and Tee completed on roof reducing internal height and therefore cost
- Two points of entry through shield incorporated in NELCO's design

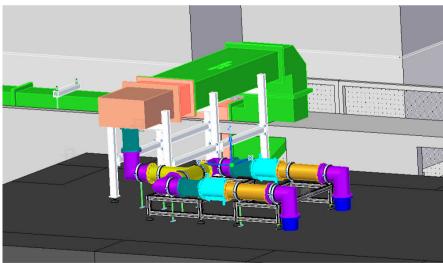


Waveguide route

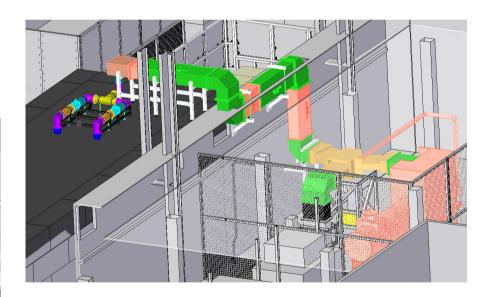




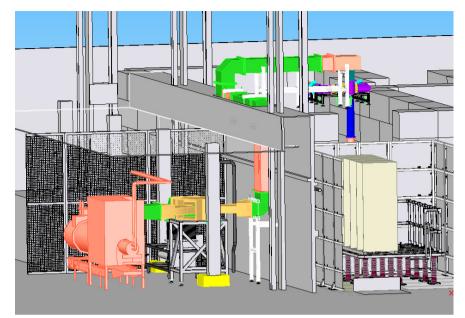


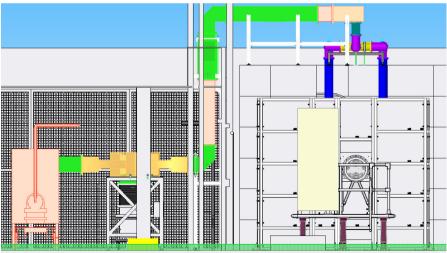


- Route through false ceiling
- Requires support structure on partition wall and roof
- Adjustment required for tuning and positioning

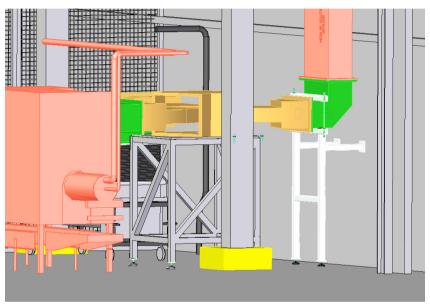




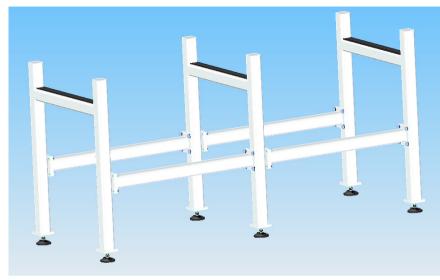




Support structure for circulator and waveguide

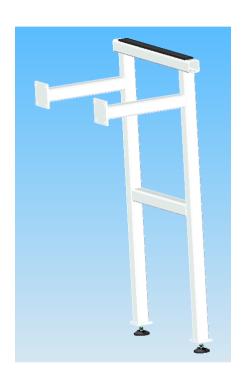








Welded box and Bosch aluminium extrusion frames



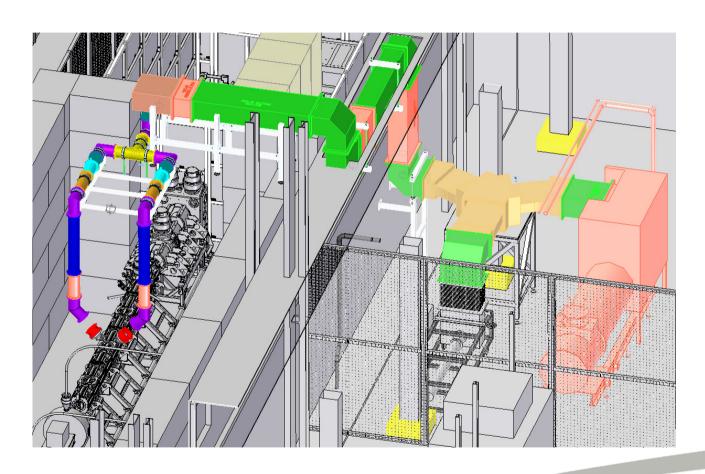


Considerations

- Minimise components required to finish run
- Positioning of components inside blockhouse for ease of operation / reach
- Access required to roof may necessitate inclusion of safety features like rails, permanent stairs and interlocks
- Which ports are used on the RFQ
- The amount of couplers required and therefore the RF routing options

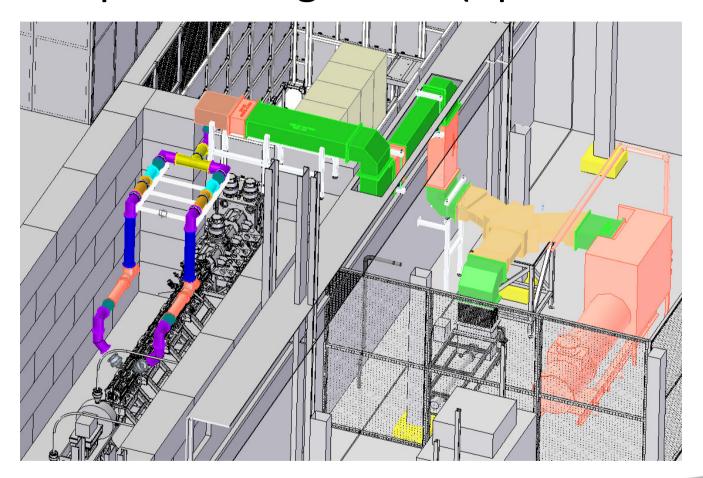


Two Couplers Arrangement



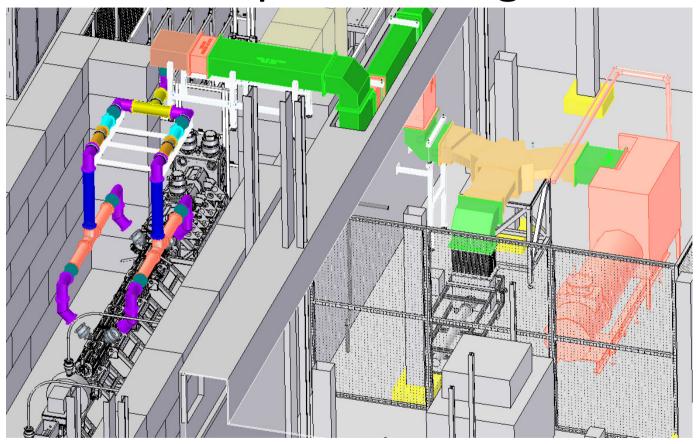


Two Coupler Arrangement (option for four)





Four Couplers Arrangement





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1		Higid straight		2	2		
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Bellows straight		Co-ax / wavequide interface		1	1	Used	
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6-10 Go-ax straight : + may be able to use just bellows		6-1/9 Co-ay etraight	2	4		May be able to use just bellows	
		0-170 OU-dx Straight		*		way be able to use just bellows	

Component list depending on configuration used





QUESTIONS