

About the RRWPTC Station. Matters for attention.

1. Remember always that the wind may be dirty. For example carrying salt, fine silt and even sand from as far off as the Sahara Desert.
2. Rain is likely to be present at all times and one should ask if the entire building should be roofed in such a way as to keep out all rain except that with the incoming wind.
3. The actual aerodynamic form of the wingsails needs calculating. Then how many and what should the attack angle be. Should the second row blades mesh with the first row so that the first row causes the wind to hug the second row blades? Consider gas turbine methods and sailing vessel methods.
4. The wingsails are big and within the outer shape they will be constructed as fully supported beams so far as the wind loading is concerned; but each wingsail must carry its share of the top deck and by way of that deck and the lower deck transfer the wind load force to the energy transfer ring. Rigging is not out of the question and might be the cheapest lightest option.
5. There will be over turning moments just as a ship heels over but the wings will be restrained by the width of the tracks and the rollers at the side of the top deck meeting the thrust rail on the road to the rear of the wingsails on the exhaust tunnel. The ring of wingsails will be restrained with proper engineering limits to have a very smooth action at all times
6. The carriages will need to build up as trains are connected so that the ring moves as a train moves and all the forces generated by the wind can be taken out of the system as a braking force along the centre line of the train. The rails top surfaces must be close to being in a single horizontal plane as it is possible to achieve such as +/- 2mms. Such a limit may call for grinding concrete under the rails and or grinding the rails once they are positioned. The same methods will apply to the side thrust rails.
7. With regard to the faces of the electro magnets and the pick up coils. Sand getting in here could cause very quick wear. This has to be thought about early on. There are many solutions including small roofs, blowing, sucking and brushing. But clean they must be to get the finest necessary tolerances.
8. People. They will be all over the place. On the decks, moving between decks and off the machinery moving anywhere and they must at all times be safe. The HSE will only come into the picture after the machines are ready and answers to its questions must be installed from day one.
9. The intake to the machine will be trying to fly away. The reaction forces the top faces of the air intake must provide will need to come either from cables to anchors, pylons and cables to anchors, or well founded beams. The inner roof will be faced with the same forces as the wingsails will be using to drive the station and there will be energy losses to be taken into account.
10. Likewise as we shall be looking to use the vacuum force from the downwind side of the machine in the process, that force will start at the rear of the roof which must be strong enough to provide it. The roof could fly away due to suction as well as pressure. These factors must be negated in the event of very high winds or

- controlled so that enough wind is used to work the machine safely and the rest leaked away as with a ship with sails reefed or under bare masts.
11. Lightning strikes. The roof supporting pylons will make very good lightning conductor supports. No doubt some of the pylons will be struck in the course of time. The conductors must be there not just to provide an earth potential high in the sky but to accept the current when it arrives and safely conduct it to ground. These techniques must be widely known and they will need to be incorporated.
 12. There will need to be skirts from the lower deck floor to close to the ground to keep people and animals out from the spaces beneath the machinery. The inner skirt shall be scoop like in form to help the wind into the wingsail area. Similar up ended skirts will be needed at the top deck. The rearward skirt outside the outer edge of the deck faces will curve outwards and downwards to smooth the wind into the tunnel.
 13. Wind at the face of the air intake may need to be conducted through 180 degrees in a vertical path to feed the blades under the intake.

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Lochwinnoch late June 2006