

**A Proposal
For
Public Art
for the
Brookpark Rapid Transit Station
of the GCRTA**

Pete Beeman

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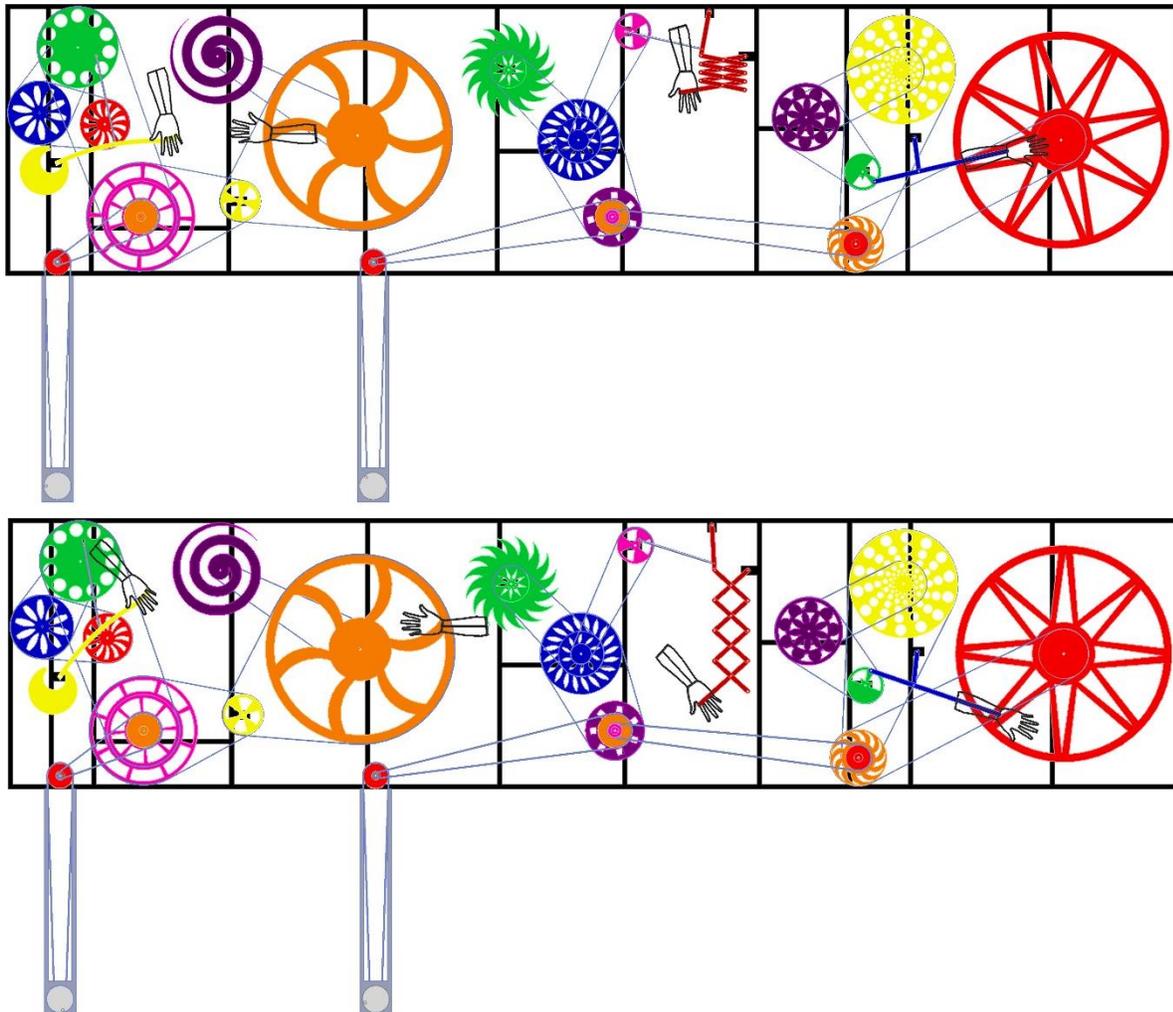
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The Brookpark Machine

There is no better tribute to the American industrial experience than the machine itself, and no better emblem of the American factory worker than very hands with which he works. With these two thoughts in mind I set about to design a sculpture that brings both elements together.

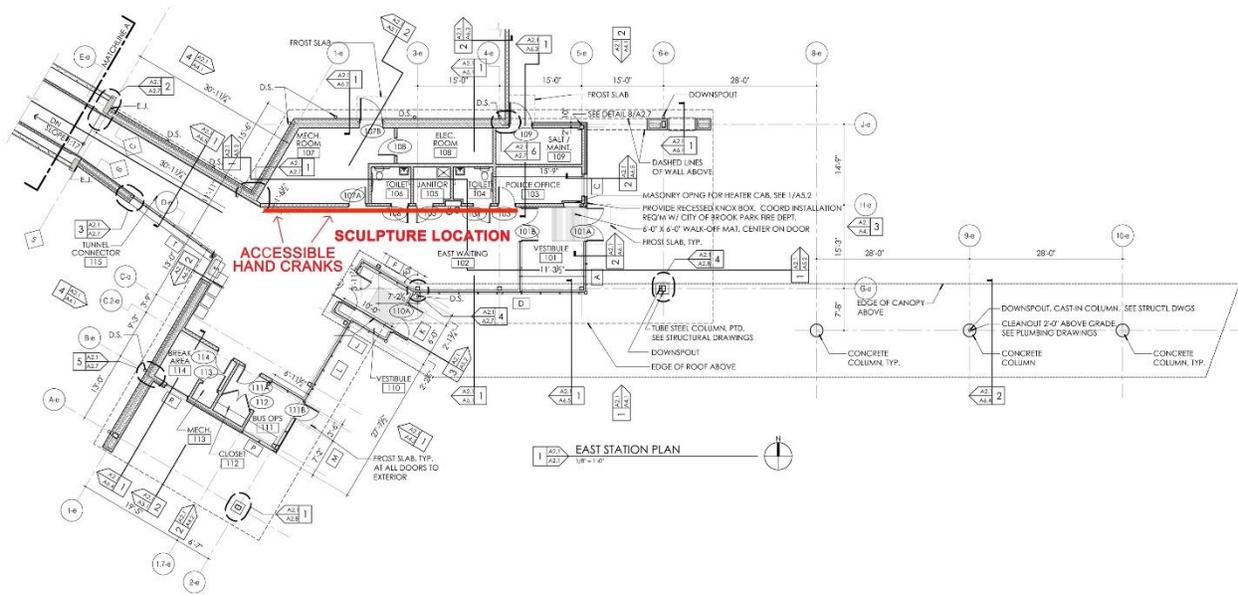
I will build a vast machine on the North wall above the East Station waiting room. The machine will have no function other than to run when operated by visitors to the station. It will have 2 access points, or stations, extending down to visitor level. Each station will have a robust and easily operated hand crank allowing visitors to bring different parts of the machine to life. As a hand crank is turned the motion will drive an interconnected series of wheels, belts, sprockets and chains bringing the brightly colored machine into action. At the end of each of 4 branches of wheels and sprockets is an abstracted giant sized muscular hand made of polished stainless steel rods. Each branch of drives makes its' hand move around in a particular pattern, as though engaged in industrial work with the machine they are part of. The machine is industrial in form and function, yet playful in color, execution and utility.



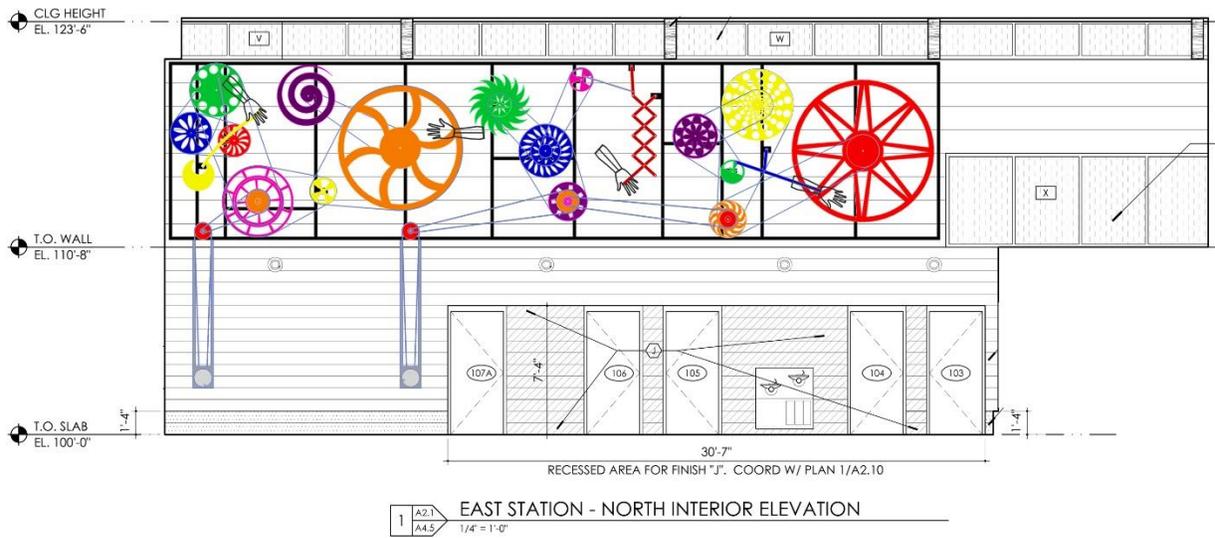
In this sculpture it is the visitor that becomes the factory worker in a sense, applying their hands and muscle to make the industrial machine go round. The box on which the crank is mounted has a glass front, allowing visitors to see the spinning shaft driving the sprocket and the drive chain moving up the column.

Site Plan

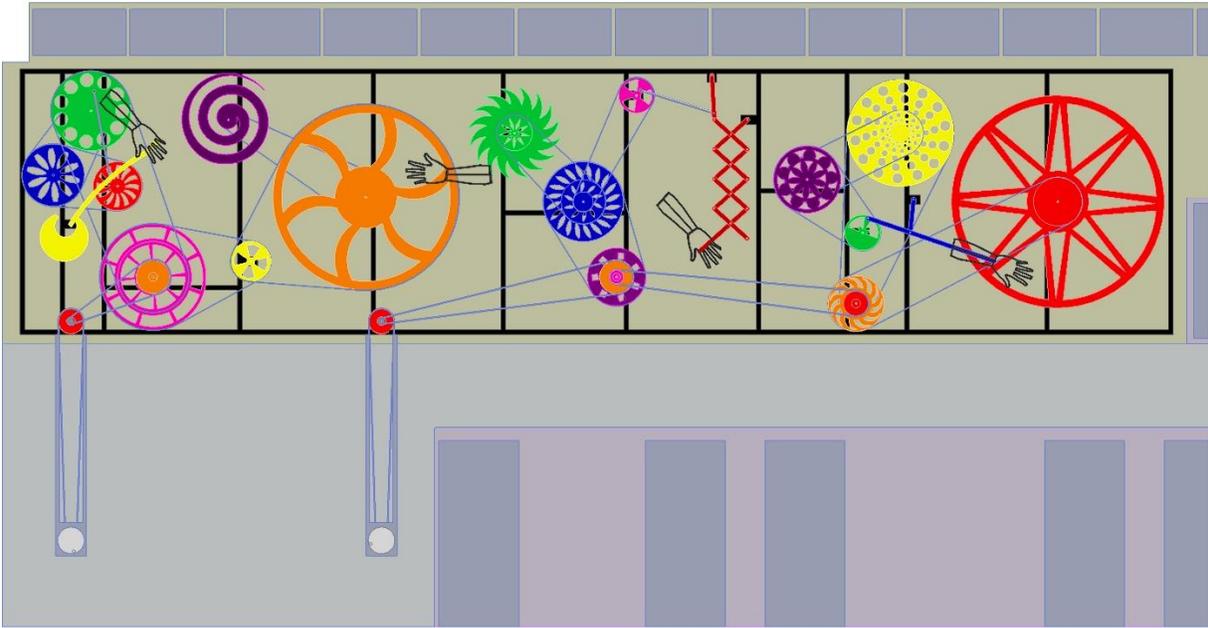
The Brookpark Machine will be inside the East Station in the East waiting area.



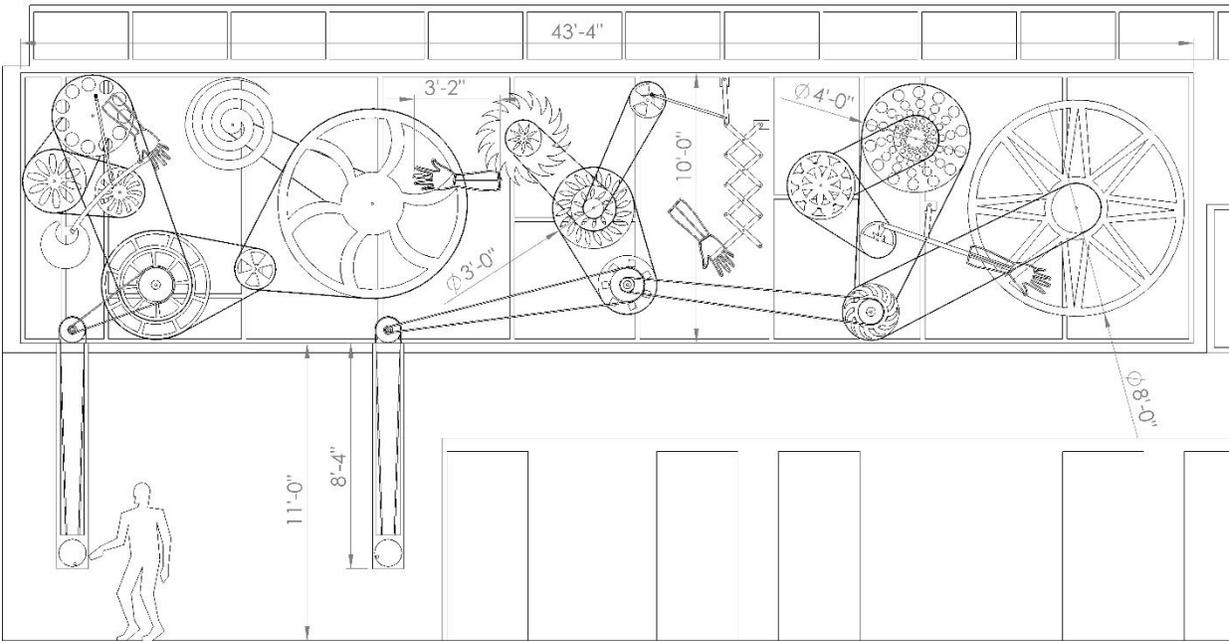
It will live on the North wall above the doors to the mechanical rooms and restrooms. The hand cranks will be on the wall at waist level between the door to the mechanical room and the tunnel to the station platform.



1 EAST STATION - NORTH INTERIOR ELEVATION
1/4" = 1'-0"



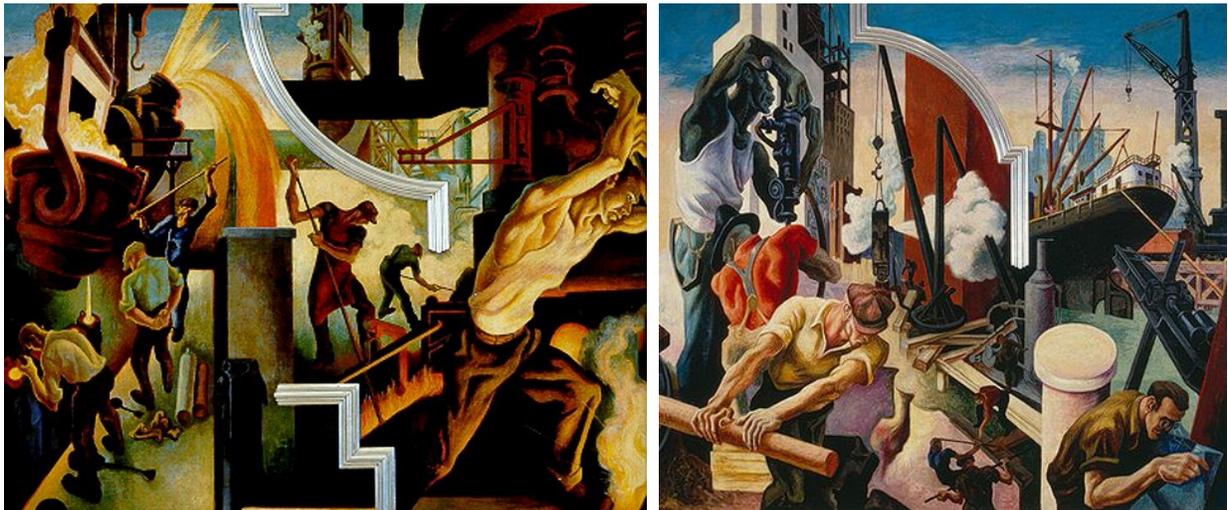
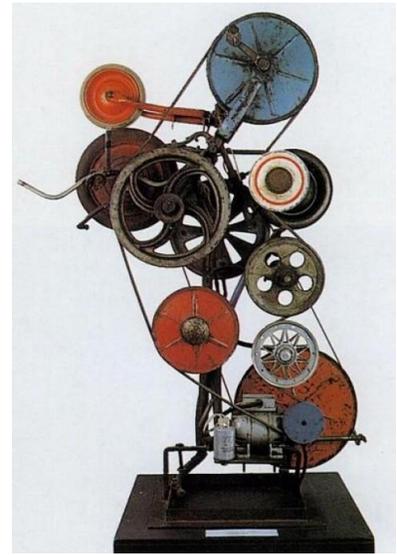
Dimensions and scale



History and Precedent

In addition to the obvious connections this sculpture has to the industrial experience and the factory worker, this sculpture has precedents in the world of art. Swiss sculptor Jean Tinguely made a career of building big interconnected useless machines. Fundamental to his work was chaos and the decay of all things, so his works were often made with found objects and very quickly or loosely put together. The Brookpark Machine, while in a similar visual realm, is relatively simple and ordered, clear in its “function” and will be made with precision and new materials, focusing on the durability and order inherent in a well-built machine.

The other art historical references here are the Thomas Hart Benton paintings of factory workers, with their exposed and burly working arms. It is the Benton arms that inspire the moving arms in the Brookpark Machine.



Fabrication/materials

The frame will be powder-coated steel. The twin access stations have stainless steel cases with tempered glass fronts, allowing the mechanism of the first crank to be visible. The wheels will be custom built in steel, aluminum, and wood, depending on the wheel. The sprockets, bearings, bushings and rod ends are all standard industrial parts built for long life under much higher loads and speeds. They are all off-the-shelf, readily available parts. All parts will be painted with a two part epoxy paint or powder-coated.

Safety

All surfaces will be safe to the touch. The structure and its mount to the wall will be approved by an engineer licensed in Ohio. With the exception of the hand cranks, all moving parts will be out of human reach, either within the access column box, or high overhead. The drive cranks are inset flush with their case, with no more than a 1/8” gap and no pinch points. The drive handles will drive a slip-clutch at the first gear, so if anything should get into the pulley system, the clutch will simply slip instead of driving the wheels, preventing injury or damage.

Maintenance

Parts within reach are all stainless steel or tempered glass. The main maintenance task will be greasing the bearings and lubricating the drive chains. This should be done once a year. This can be done in less than one day by one person with a ladder, a grease gun and a PTFE spray lube. The bearings, chains, and sprockets are all designed for rugged abuse at much higher loads and speeds than they will ever see here. With annual greasing they should easily last 20-30 years, and could be longer. The belts will occasionally need to be replaced. I will provide spares. The sculpture will come with an Owner's Manual that spells out exactly what everything is, where everything is, what size everything is, what lube to use on which part how often, etc.

Timeline

I would hope to complete the Brookpark Machine by fall of 2015, and be ready to install it when it best suits the RTA.

Budget		100	hourly		
		#	cost per	cost	sum
design		1	80	8000	8000
materials	support frame	300	4	1200	
	drive boxes skin (stainless)	2	400	800	
	drive box glass	2	200	400	
	drive box frame & plates	2	60	120	
	drive cranks (stainless)	2	120	240	
	shafts	20	20	400	
	bearing pairs	21	160	3360	
	bearing mount plates	19	20	380	
	sprockets	8	110	880	
	chain & belt tensioners	18	100	1800	
	wheels large	6	750	4500	
	wheels small	10	350	3500	
	drive chains	90	5	450	
	drive belts	210	10	2100	
	tie rods	2	50	100	
	4-bar arms	2	50	100	
	scissor arms	9	50	450	
	arms	4	100	400	
	hardware	40	12	480	
				21660	21660
		#	hours		
fabrication	support frame	2	32	6400	
	drive boxes skin (stainless)	2	12	2400	
	drive box glass	2	4	800	
	drive box frame & plates	2	6	1200	
	drive cranks (stainless)	2	10	2000	
	shafts	20	1	2000	
	bearing pairs	21	1	2100	

	bearing mount plates	19	3	5700	
	sprockets	8	2	1600	
	chain & belt tensioners	18	4	7200	
	wheels large	6	16	9600	
	wheels small	10	8	8000	
	drive chains	5	3	1500	
	drive belts	13	3	3900	
	tie rods	2	5	1000	
	4-bar arms	2	5	1000	
	scissor arms	9	4	3600	
	arms	4	8	3200	
	hardware	40	0.5	2000	
	test assembly	1	16	1600	
				66800	66800
	powder coating wheels	18	250	4500	4500
	powder coating frame	2	475	950	950
	engineering			3000	3000
	crating			2500	2500
	shipping			5000	5000
	mount system			2000	2000
installation	labor	2	32	6400	
	flights	2	500	1000	
	equipment			1200	
	hotel	4	200	800	
	transport			300	
				9700	9700
contingency	10%			13790	13790
				total	137900