

It was built in the
year 2112.

Its construction was the culmination of trillions
of dollars and years of development by all
governments and sporting codes of the Earth.

This is the **ULTRADOME**. Its entire
development and construction was for one reason
only.

To make it possible to play
GRAVITYBALL.



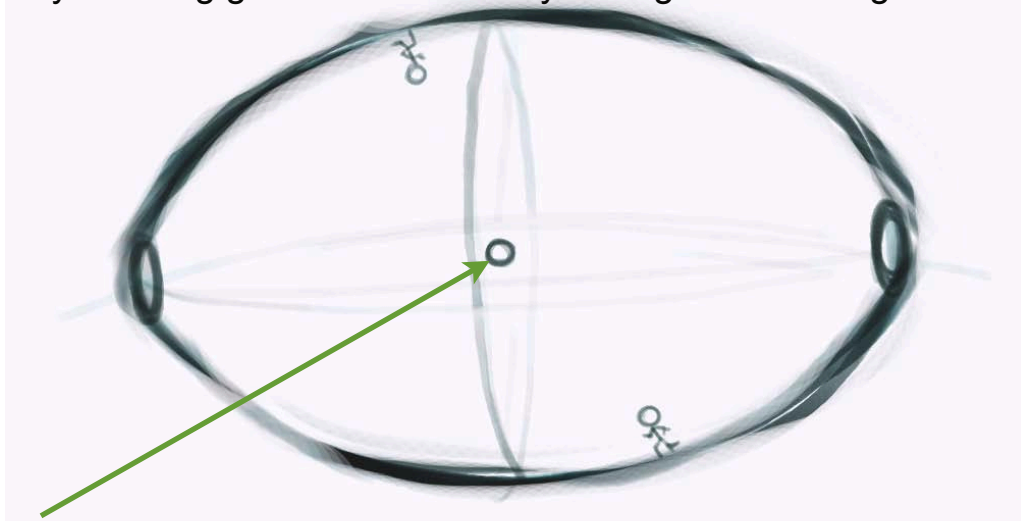
Gravityball has become the dominant sporting code and is followed intensely by all Earth, Moon and Outlying Station residents. It has generated a thriving culture of teams and clans.

A sophisticated system of rounds and matchmaking have been developed to have a dominant team proclaimed each month and a true All Worlds Champion team honoured every year.

Gravityball at world championship level is played by 2 teams of 5 players.

The unique physics of the game is created through the interaction of the electromagnetic playing surface of the Ultradome and the suits worn by the players.

A player is able to run on all of the interior surface of the Ultradome, as the 'gravity' is being generated artificially through electromagnetism



The scoring ball will always have a small force pulling it toward the centre and will start there for each new round

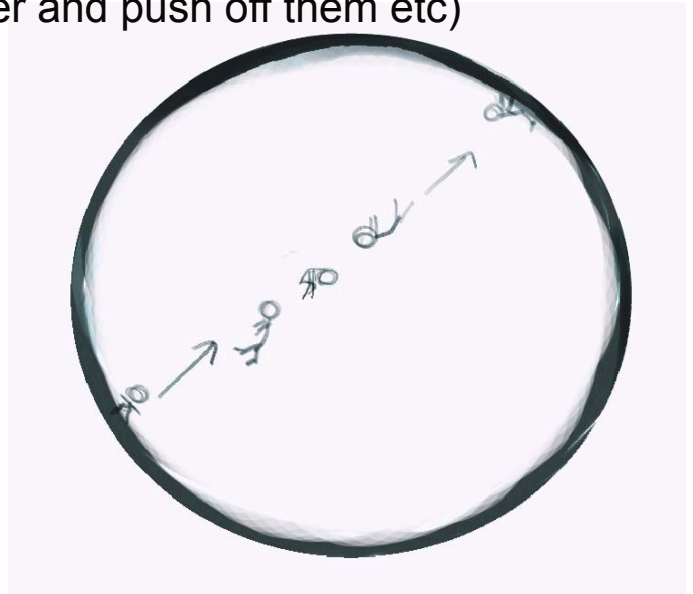
Gravityball is played in a series of short rounds. A round ends when

- * a team scores by getting the ball through a small goal at either (pointy) end of the playing field.
- * the ball is smothered and does not move for a count of 10.
- * the time limit runs out. (proposed at 90 sec)

Between each round the players will have the opportunity to 'tweak' the suits they are wearing. They will be able to make themselves heavier (increase the ElectroMagnetic Force) or lighter {EMF decrease). However it is not physically possible to change your mass. In this way a large and bulky player could dial their suit for speed and agility and a small player can become a tank.

Another ability of the suit/playing surface interaction is the ability to boost or spring. A player will be able to launch themselves across the playing field, and while they have no contact with the playing surface they will be operating on Newtons Laws of Motion, so they will be essentially like a pool ball, the only way to change direction will be to collide with something (grapple another player and push off them etc)

A player can jump across the playing arena and land on the other side. The gravity will 'switch' at the 'dead zone' in the centre point.



The game would consist of running, jumping, passing grappling and barging. The sentient computer system that is running the Ultradome, called Ultra keeps a constant monitor on all events in the game. Ultra provides statistics to players about distance run, time with the ball, tackles made etc. (much like the stats available to football coaches, players and fans in 2011) Additionally Ultra also maintains a players physical integrity during the match, so although a player may be tackled in a way that would cause injury, (e.g. head acceleration or a knock that would generate a concussion), Ultra, through controlling the suits and playing surface, will record that this would have happened as a statistic and then prevent it from happening. Ultra will not allow a players limbs to be hyper-extended, heads to clash or any other injury causing event to occur, but it will provide a full list of these occurrences during and after the match.

Curriculum- Gravityball is intended to be a fun and exciting game for anyone to play, but here are a few educational outcomes that can be utilised by a teacher..

Physics

- Newton's Laws of Motion
- Gravity
- Mass and Weight
- Vectors, force and acceleration
- Magnetism

Communication

- teamwork and strategy
- cooperation
- giving and receiving instructions

Measurement

- Dimensions of the Ultradome
- surface area
- shortest distance from point to point i.e. running on the playing surface is not the shortest distance
- geometry
- time
- statistics
- human anatomy
- angles

Anatomy and Biomechanics

- human movement and limits
- names of muscles and bones
- angles and constraints

**This is a early draft of Gravityball,
the artwork is for concept purposes
only. I appreciate any and all feedback.**

Aaron Agius 2011