

BX7282IS - Annual PC 4.1.5 - 2019 EMS submission

Introduction

AB-Inbev UK is part of the world's largest brewer, producing some of the UK's most popular beer brands, including Stella Artois, Budweiser and Corona as well as local favourites such as Boddington. With around 1000 people working across operations in the UK, it is home to two breweries (Magor and Samlesbury), as well as a local headquarters in London. In 2019 UK breweries were renamed Budweiser Brewing Group UK &I.

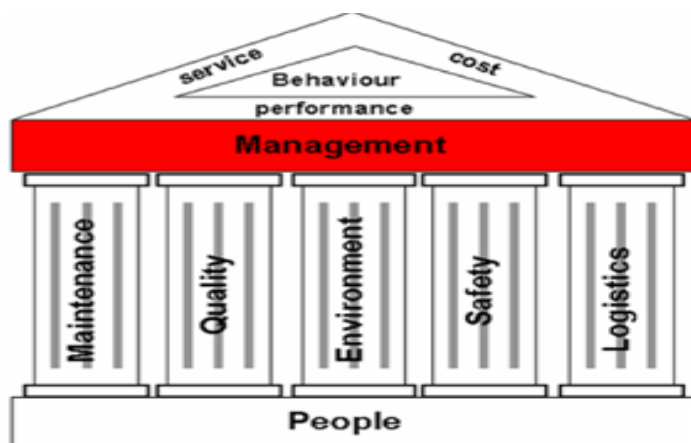
The installation consists of two physical sites; the main brewery site and the effluent treatment plant (ETP), located approximately 3 km south-east, and connected by an underground pipeline approximately 5 km long.

Raw materials used during the brewing process include natural spring water (supplied by Welsh Water), malt, hops and other additives such as rice and maize. The process involves five stages; brewing, fermentation, maturation, filtration and packaging. Water is used for cleaning and heating in addition to being a main ingredient of the beer.

Company Management Standard

ABI UK Ltd follows the company in-house management standard Voyager Plant Optimisation (VPO). It has the overall objective of meeting the organisations mission and vision of achieving results, whilst simultaneously bringing greater efficiency and standardisation to operations worldwide, hence generating cost savings. It aims to create a culture of continuous improvement (CI) and empowerment within the organisation whilst providing quality, safety and environmental benefits.

It achieves this by the utilization of a structured form of management based on a Kaizen process of Plan Do Check Act (PDCA) methodology, and by the CI of existing and new processes, procedures and tools that define the framework to create the necessary results throughout the business.



Results:- Results Against Target (RAT)

Performance, Financial, Quality, Environment, Safety, Logistics and People tracked monthly via pre-determined Key Performance Indicator baskets

Means:- Self Assessment Tool (SAT)

Method – Management Pillar
Leadership – People Pillar
Knowledge – Maintenance, Quality, Environment, Safety, Logistics and People.
Scored via a monthly self-assessment audit.

The roof of the house represents the results, and the vertical pillars reflect the means by which the results are achieved. Vertical Pillars are also described as the Technical or Knowledge Pillars

The two horizontal pillars comprise of:-

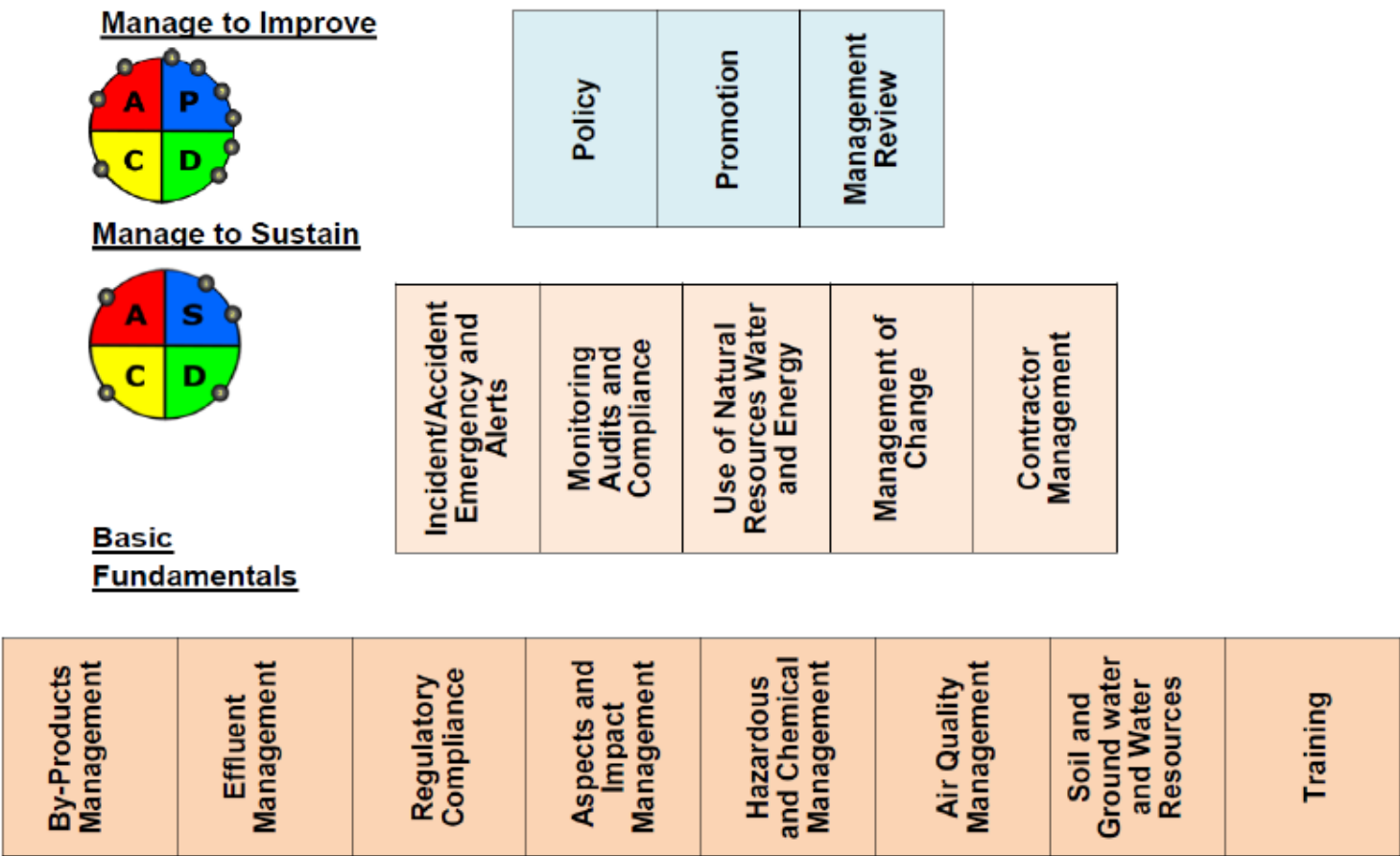
The People Pillar - which defines the policies, procedures and processes to manage and develop the teams, thus promoting a culture of leadership, and;

The Management Pillar - which crosses all of the Technical Pillars and ties them with the results, whilst providing the methods to sustain and continuously improve. It aims to optimize and standardize plant operations across the globe on its journey towards its dream of becoming "The Best Beer Company Bringing People Together for a Better World".

Finally, by the successful implementation of the method supported by the Knowledge Pillars (namely Maintenance, Quality, Environment, Safety and Logistics), the necessary behaviours will be established to continuously drive and sustain performance improvement and share best practice.

Environment Pillar Structure

Environment Pillar



Environmental Permit

Application been made in 2019/20 for a variation to the site permit. This will be conducted in line with NREW and link to the Business name change and relocation of the head office from Luton to London. This will also include an number of planned and proposed changes to the brewery operation.

PI and emission data will be submitted through the European Release and Transfer Register (E-PRTR) and those required for the National Atmospheric Emissions Inventory (NAEI).

The method of submission will be via the reporting tool hosted by Ricardo Energy and Environment, the company contracted to DEFRA to collect the UK PRTR submission.

Notifications

2 notifications submitted for 2019 . Responses are being addressed.

Updates

The site accident management plan has been updated.

The Site Condition Report has been updated and has been shared with NRW.

The site drainage has been surveyed.

Borehole water sampling has been undertaken.

Variation for the site environmental permit BJ7282IS has been submitted and is in the process of review. The radiation permit variation has been submitted and accepted.

External Site Environmental Impact assessment has been completed.

Nuisance

No nuisance complaints have been received for 2019

Key Environmental Initiatives for 2019/20

Restoration of the integrity of storm water and waste water drains remains the key priority for 2020.

Additional work is to take place in March/April 2020 conditions permitting.

BTS control and optimisation.

Reclaim of the hot water used for brewing back into the site water system.

Start of the project for the automated warehouse 2. This will allow the facility to reduce carbon emission from forklift usage and reduce the carbon footprint..

Project Yellowstone- an energy saving initiative in the Brewhouse, reducing electrical use and energy intensity in the brewing process.

New centrifuge in place to reclaim spent grain and spent yeast and reclaim waste water and beer.

Discussion being held for the introduction of hydrogen powered forklifts . This will reduce the carbon footprint compared to the existing propane powered vehicles and reduce emission to air.

Discussion underway for bio fuel driven hauler fleet vehicles instead of diesel. This will improve the carbon footprint and reduce emission to air.

Discussion underway for a solar farm to reduce the reliance on carbon.

Discussions are being held to rental or a near- by wind turbine to support energy generation and reduce reliance on energy supplies.

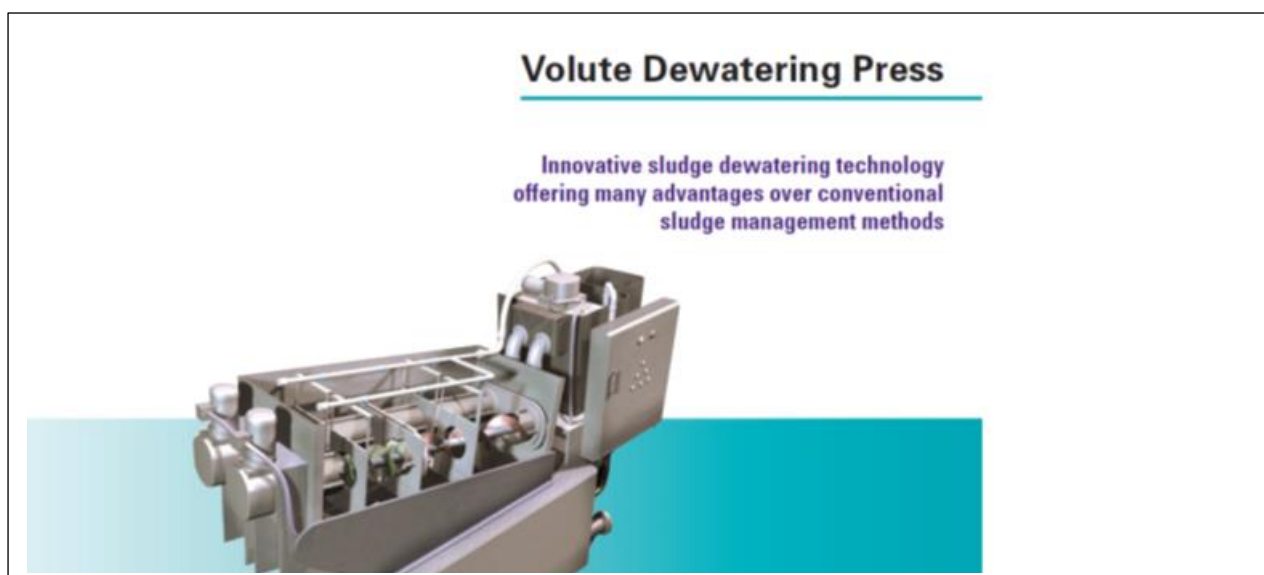
Environmental KPI's and Year End Results – Results against Target (RATs)

KPI P12-19 Published KPI's									
Year	Mon	KPI Cod	KPI Name	UOM	Locatio	MTH AC	MTH BU	YTD AC	YTD BU
2019	12	PG-K0510	Water usage Ratio - Brewery	hl/hlN	Magor	3.3367	3.7191	3.4979	3.3899
2019	12	PG-K0511	Raw Water usage Ratio - Brewery	hl/hlN	Magor	3.3367	0	3.4979	0
2019	12	PG-K0520	Electrical usage Ratio	kWh/hlN	Magor	8.6942	8.9733	8.2757	8.0799
2019	12	PG-K0521	Purchased electricity per hlN	kWh/hlN	Magor	8.6942	8.9733	8.2757	8.0799
2019	12	PG-K0530	Heat usage Ratio	MJ/hlN	Magor	71.9153	79.6846	69.2694	70.6599
2019	12	PG-K0531	Purchased fuel per hlN	MJ/hlN	Magor	71.9153	79.6846	69.2694	70.6599
2019	12	PG-K0540	Total Energy usage Ratio - Brewery	MJ/hlN	Magor	103.2143	111.9887	99.0623	99.7479
2019	12	PG-K0541	Total Purchased Energy per hlN	MJ/hlN	Magor	103.2143	111.9887	99.0623	99.7479
2019	12	PG-K0545	CO2 Surplus	kg/hlN	Magor	-0.3228	-0.8592	-0.7099	-0.3999
2019	12	PG-K0550	CO2 recovery	kg/hl	Magor	2.4812	1.8738	1.9753	2.2898
2019	12	PG-K0551	Adjusted CO2 recovery	kg/hl	Magor	0	0	0	0
2019	12	PG-K0585	Nitrogen Consumption	kg/hl	Magor	0.914	1.1997	1.0011	1.6499
2019	12	PG-K1701	Percentage of recycling	%	Magor	99.9911	99.9892	99.982	99.9892
2019	12	PG-K1730	% of efficiency BTS	%	Magor	98.4115	97.2781	97.3847	97.2781
2019	12	PG-R2100	Electricity purchased	kWh	Magor	3274683	0	40358174	0
2019	12	PG-R2150	Groundwater usage - Brewery (WA21a)	m3	Magor	125677	0	1706482	0
2019	12	PG-R2170	Kg of CO2 recovered	kg	Magor	944060	819176	8929530	13041112
2019	12	PG-R2171	Kg of CO2 sold	kg	Magor	0	0	0	0
2019	12	PG-R2172	Kg of CO2 purchased	kg	Magor	121600	0	3461910	0
2019	12	PG-R2185	Kg of nitrogen consumed	kg	Magor	369120	0	5083895	0

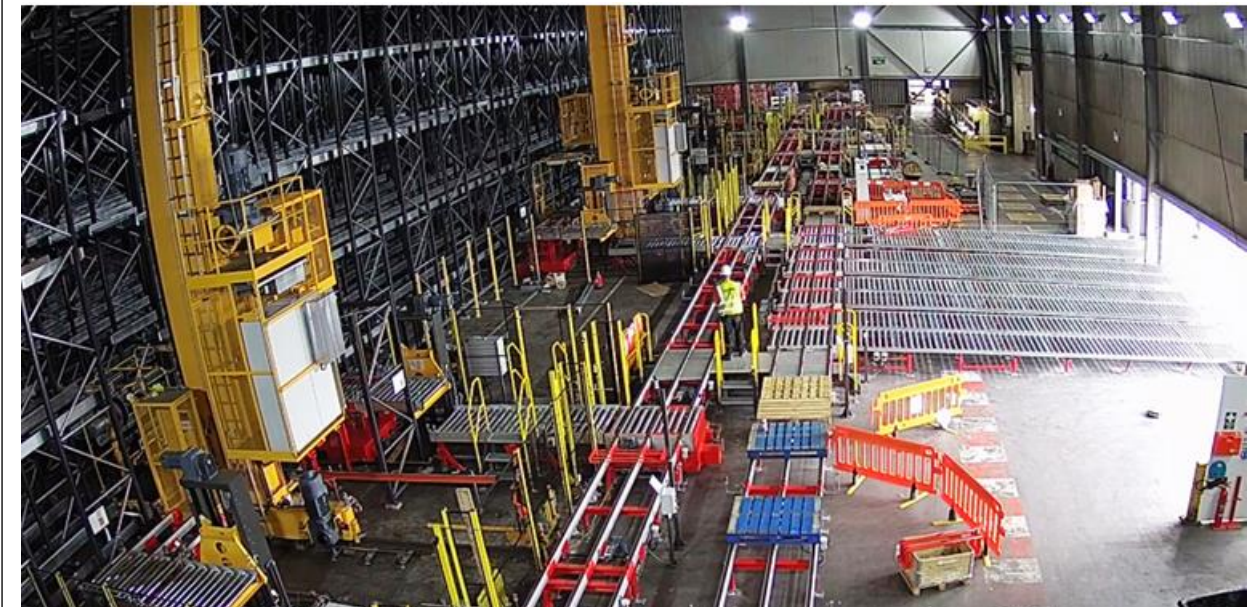
Projects and Initiatives completed 2019

Off Site Sludge (Digestate)

The volute system is operating and work is progressing on improving the consistency of the sludge produced.



Automated Warehouse 1 – reduction in NOx emissions from forklifts



Flue Ace System- reclaim heat from emission gasses



Projects

There are a number of projects that are underway in the Magor Brewery.

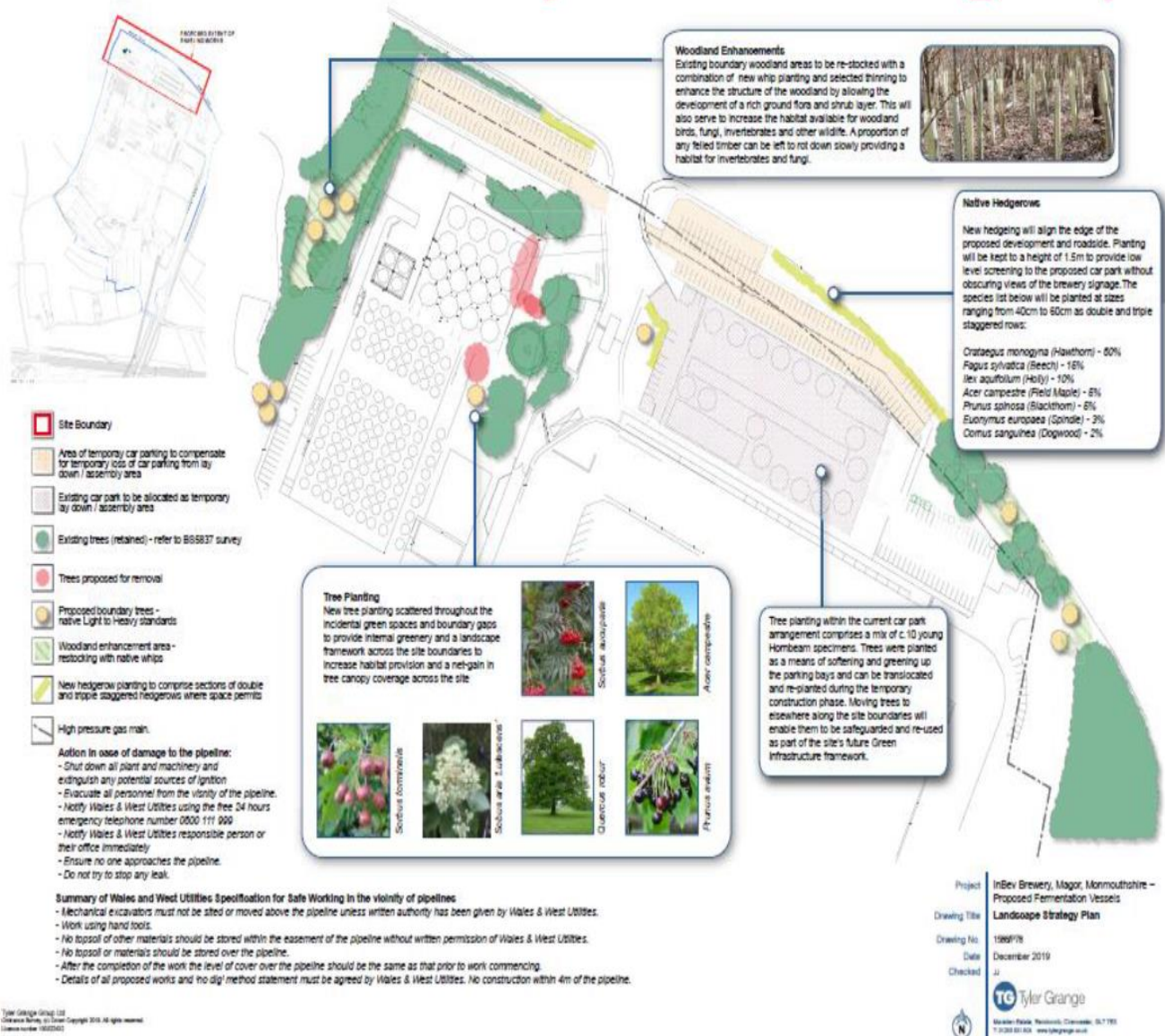
These include a new centrifuge so that by-product can be reclaimed and water and beer utilised more effectively. This will be running in early 2020.



8 New Filtration vessels



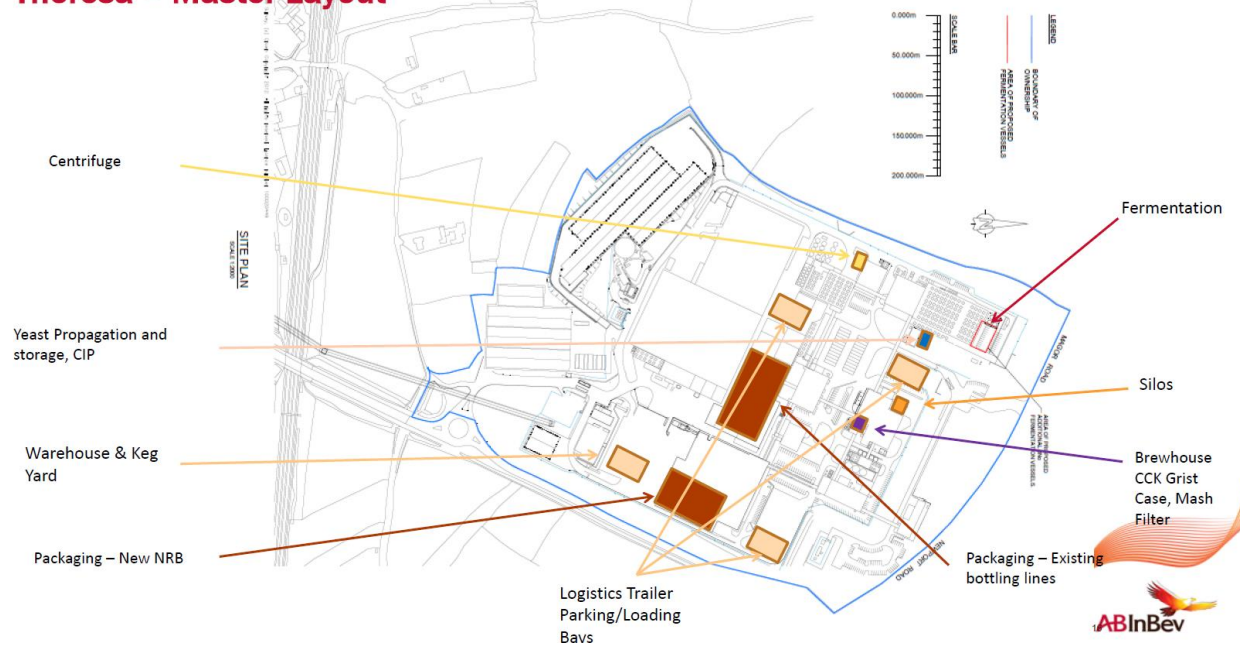
Post Project Tree Planting Proposal



Major Projects Layout and plans for 2019/2020

Diagrams 1 and 2 below

Theresa – Master Layout



Magor 2019-20 Major Works (including non Theresa)

Month by Month
"storyboard" in
place

