# site visit I

H.G Matthews Ltd.
Bellingdon Brickworks, Bellingdon, Chesham HP5 2UR

Entrance to the main brick making area where skids are being set and drawn into the drying rooms.

All bricks before being put into the kiln have the same colour.

Where the fresh clay is dumped to be transfered on the conveyor belt to be taken through the rollers.

This is an extremely messy job which requires a daily wash of all equipment.

First conveyor belt bringing the clay to the rollers.

Series of three rollers that remove all big stones and crush the small stones to smooth out the clay.

This is the machine-made bricks that work on a hydraulic and automated system.

Close up of the moulds being brought through the machine to be pressed with clay.

Workers remove the moulds and send them back into the machine to continue the process.

One of the oldest areas remaining of the brick yard.

Clay is moved further down the conveyor belt line down to the hand-made brick stations.

Clay is pumped up to the working bench where they roll clumps of clay into the sand and dust their moulds with sand.

This is the sand that is dusted on all the moulds to allow the clay to slip easily away without damaging the bricks.

Many different hand-made moulds have been created to design unique shapes.

Moulds such as this are extremely hard to get right.

Bigger the shape and size of the brick, the longer it takes to dry.
Timing is everything.

View looking back at main entrance. A lot of space at a brick yard is mainly for storage.

The timing of what is stored, dried and fired at which time is an art in itself and takes years of perfecting.

Bricks have to be dry enough to be able to be stacked and not crushed in the kilns.

In the oil kilns, there are 14 tunnels which is where the fire is located to move the heat around the kiln.

ZONE
6
THERMO-
-COUPLE
BOX
ZONE
7

ZONE
14
ZONE
13
THERMO-
-COUPLE
BOX

The roofs are removed by climbing a ladder and pushing it onto the adjacent roof behind.

Takes around a week to load and draw the bricks from the kilns.

Once the kiln is reached its maximum capacity, workers often climb up and down forklifts to get in and out of the kiln.

Stacking the bricks to be in the right order and to create and arch around each tunnel is an art in itself.

11
12

13

Old wheels and gears used to create window features.

HGM-9
HGM-2
HGM-4

Area between the wood fire kilns needs to be much larger compared to the oil kilns for the space needed for the wood.

There are little spy oils to check on the condition of the fire.

These two kilns when being fired are watching for 24 hours non-stop.

This area of H.G Matthew's is the newest addition within the last 5 years. It's the Strocks and Natural Building Products section.

Here they do all their experimentation work on hempcrete blocks, straw blocks, rammed earth and mortar.

Example of their Strock Blocks. Recently just tested how they work when fired vs. non-fired.

Example of their Hempcrete blocks. Eventually their plan is to grow their own hemp so it can be sourced locally.

Example of the Rammed earth testing that they’ve been doing.

Example of the different mortars and the colouring they test.

This is the machine used to mix the mortar.

This is the machine used to mix the clay with straw to create the Strocks.

There is a total of 8 Biomass boilers used for the drying room.

Many hidden gems at the brickyard, this Striker machine happens to be one.

This shows how the wood chips feed into the machines

This is where all the ashes are put and needs to be emptied every day.

The ceramics facility is also fairly new to the brick yard and has been extremely successful. They glaze their own bricks and do a lot of experimenting with the different colours and textures.

QUINN CEMENT
DATE
JOB
DAMPER CHECKED
AREA CLEARED

Another very unique area of the brick yard is where they do all of their specialty cuts and creations.

Fixing bricks and joining bricks takes a lot of skill to make it look flawless on these jobs.

Examples of creating custom pieces through joinery.

# site visit II

H.G Matthews Ltd.
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REFWOOL 1200°C

Entrance into main brick making area. This is a view of the offices. The office on the end is intentionally peeling away the wall to show the construction of their strocks and mortar work.

Every wall surface available is usually taken up with moulds.

Line up of bricks ready to be taken into the drying rooms.

Insulated door for drying room number two.

Air circulation is key in these drying rooms so that all the bricks dry evenly. Much trial and error went into designing these rooms.

Passage ways like this can be found throughout the brick yard. Facilities growth happen quickly leaving behind these make-shifts improvisations.

REID
REID
REID
BREEZE
BREEZ

Covered storage room space.

Covered storage room space outside. Backed on the clay bed area.

Any brick before being put into the kiln can be crushed and broken down to make new.

Anthracite is mixed into the clay as a stabilizer. Seller is from Swansea.

GARSIDE
GARSIDE
EH Smith
Builders Merchants

MATTHEWS
BELLINGDON

Broken bricks that come out of the kiln can be crushed down and put back into the mixture.

They only crush down products from their yard because they know it has all the same minerals as their clay bed.

Machine used to sift through the crushed bricks and have only the remaining powder put back into the clay bed.

Much of their land they are lucky to have the space for storage.

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PÖTSCH

KX67
EXP

Danger
Forklift trucks

On the properties they own they find a lot of flint stone.

They either leave the stone as is and it's used to create walls. Or they are sliced to create clean faces as beautiful historic features.

LK10
JZE

DOOSAN

GL60 CRZ
KE04 EAN
CH02 EON
KW18 UTW

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VAUXHALL
VIVARO CDTI
YS61 CFP

KM66 YJD
KS10 WJL
KP08 YCU

NISSAN
VE61 WYR
JUKE

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HANDMADE
DOUBLE BLENDED

H.G.MATTHEWS
HANDMADE
WOODFIRED

H.G.MATTHEWS
HANDMADE
WOODFIRED
DOUBLE BLENDED
MACHINE MADE
DOUBLE BLENDED
MATTHEWS
BELLINGDON

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WOODFIRED
H.G.MATTHEWS
WOODFIRED

RUBBISH
Only

RUBBISH
Only
PSSU 401099 1
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PSSU 402608 8
42G1
MAX.GR.
NET
H.G.MATTHEWS
HANDMADE

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DO NOT
STACK
FRAGILE

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EIGENTUM DER CHEP DEUTSCHLAND GMBH
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NO
UNAUTHORISED
ACCESS BEYOND
THIS POINT

Workspace providing machines to cut bricks for joinery and specialty jobs which are usually for heritage buildings.

Their Ceramics department has only been in the works for five years and due to flexibility to experiment it has attracted high profile clients.

R.C.
MATTHEWS
BELLINGHAM

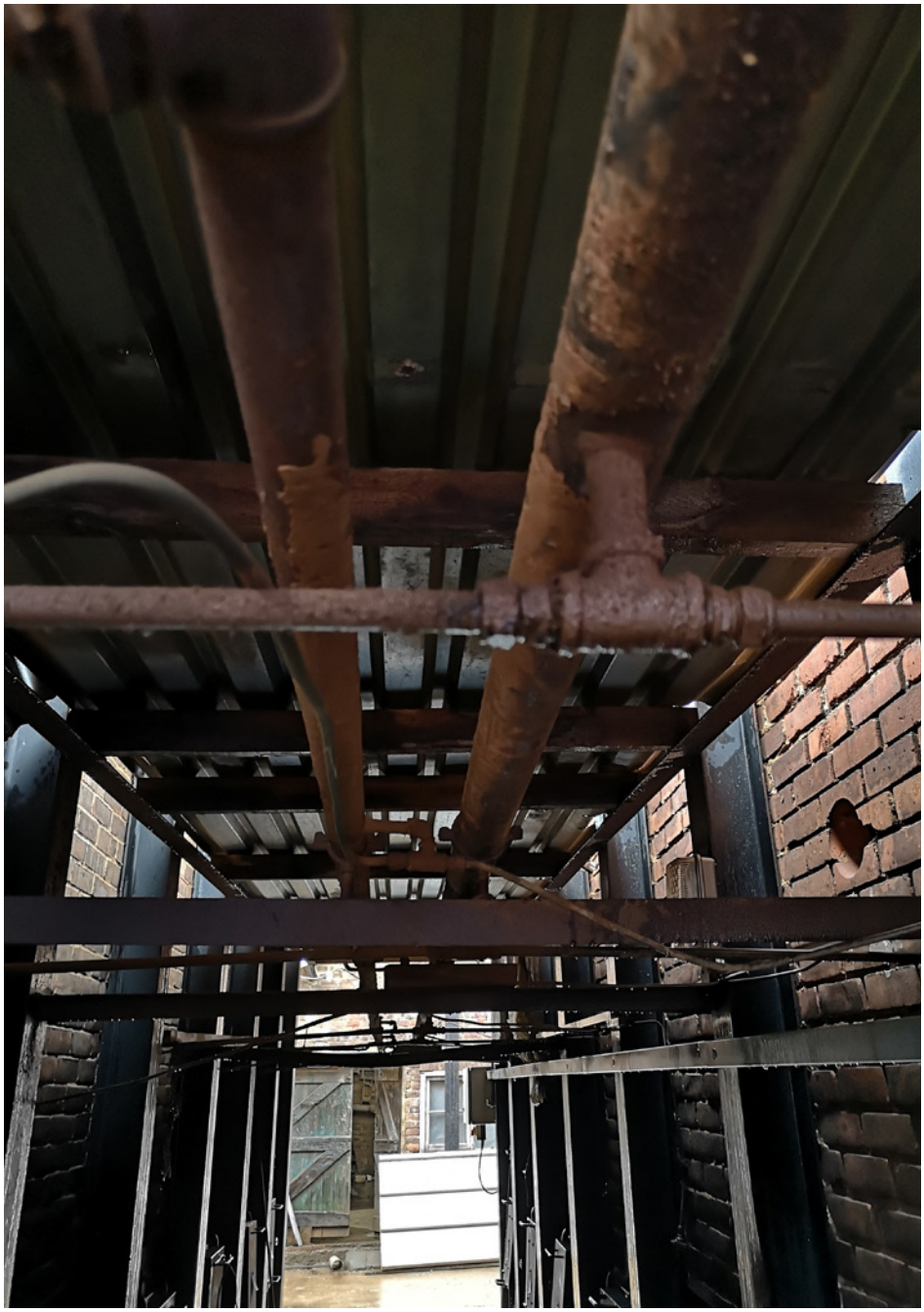
H.G. MATTHEWS
HAND MADE
Wienerberger

Close up of the moulds being brought through the machine to be pressed with clay.

View into the heritage specialty workshop.

HGM
56/10 S

Two lines that feed into the oil kilns. The bigger pipe is air and the other is oil.



These two lines feed 14 chamber tunnels to fire the kilns.

This conveyor belt shown above here is also attached to the initial conveyor belt used for brick making. This one feeds the room for roof tiles.

Excess clay is brought to this bucket which can later be fed back into the main clay bed mound.

View of Roof tile making room.

A lot of clay gets stuck in the conveyor belt because it is so sticky which can cause a lot of hiccups in the work unless taken care of.

Kingspan
Kooltherm

Moulds used to make roof tiles are all done with slip-mould method.

There are some really historical moulds featured here that have been passed down through generations.

Creating the Ridge tiles for the roof require exceptionally labour intensive moulds and precaution.

Working station for the roof tiles is much smaller compared to brick making because it's not as in high demand. As you can see here it's been taken over by the Strocks.

Moulds used for Ridge tiles for roofs. They are made out of rubber and wood.

Plastic piece is put on top to prevent sticking.

This is the oldest section still standing of the original brick yard. The roof used to be extremely low and they decided to keep the original and just build on top.

This working station was the very first of the company and is barely used today.

ON

This room hold the oldest and rarest moulds the company has made.

They are no longer used but kept for sentimental value and to inspire workers what can be done and how far they've come.

Chiltern Ridge
Apple Juice

Customers
Name/Stock
QTY
SHAPE
TYPE
DATE

DATE
22MM
1MP
CHALCONT
360
MAPLE DURHAM MADE
METRIC

Another shot of the original building and more hidden gems.

Shot of the clay rollers. Due to conveyor belts leading to other rooms it creates a bit of chaos.

Equipment behind the kilns collecting the rubble from the rollers.

Machine for machine-made bricks. Protective fence to prevent accidents.

Better view of the moulds after being dusted with sand.

There are two extra moulds laying beside because the other 14 circulating in the machine need to be power-washed every hour.

Whoever is working in this station needs to make sure the clay that's been pressed in the mould comes out flat.

This is a two man operation. One checks the bricks, the other stacks. Half way through the day they switch positions.

Where the moulds get power washed.

There is a work shop dedicated just for making, organizing, and fixing the most used and common moulds.

May not seem organized to anyone new, but this is the first time in 5 years there has even been a space for this.

Organized chaos.

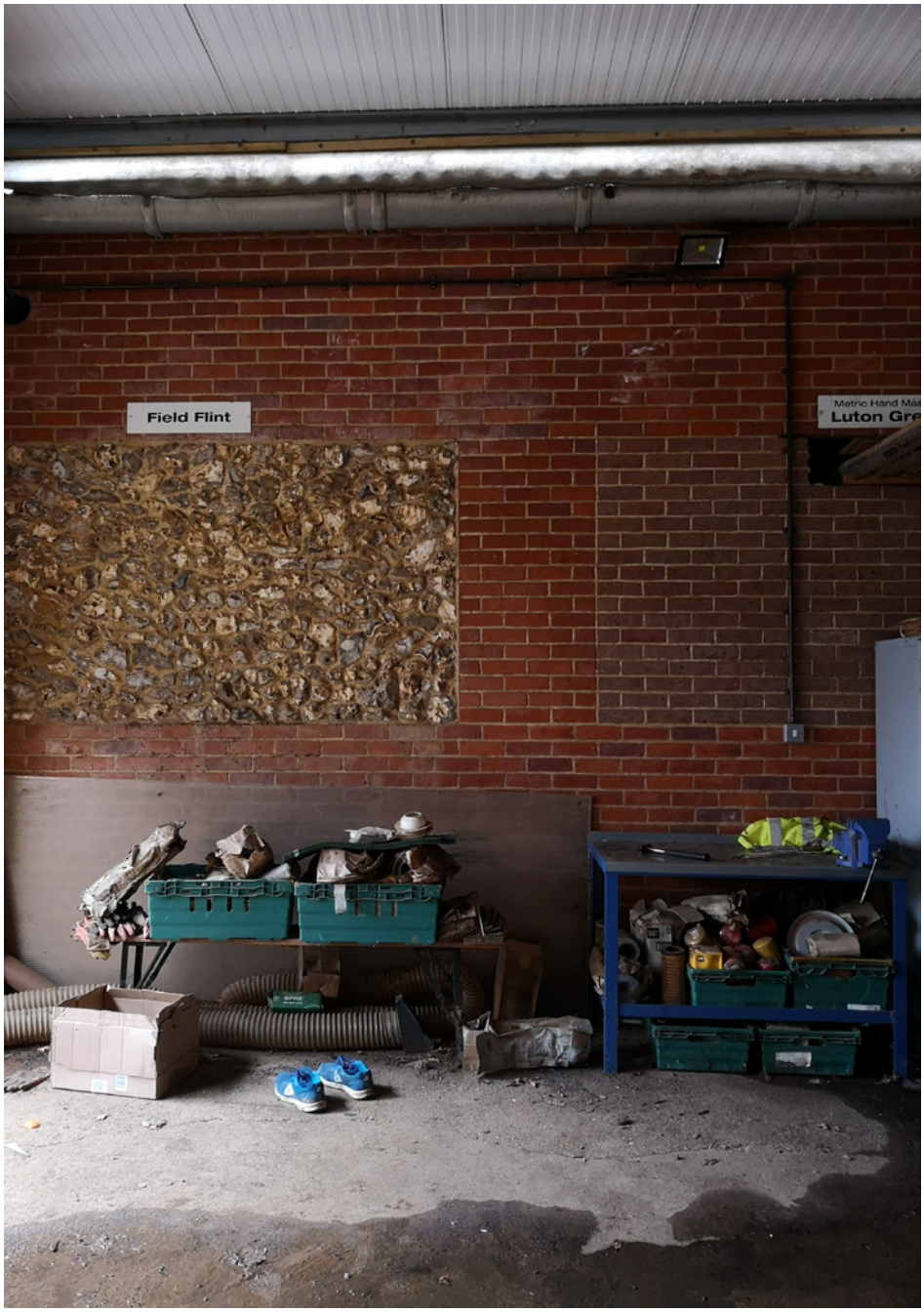
This bucket of sand is from a supplier 10 miles away. In the back of this image is another working station for specialty moulds.

View of the circulation space between drying rooms.

Pipes feeding the drying rooms from boilers 1-4.

Pipes feeding the drying rooms from boilers 1-4.

View of space for boilers 1-4.




Along this wall they have features of all the different types of brick patterns and stone work they do.

Where the wood chips are fed into the machine.

There is just enough space to circulate around each of these machines without it being hazardous.

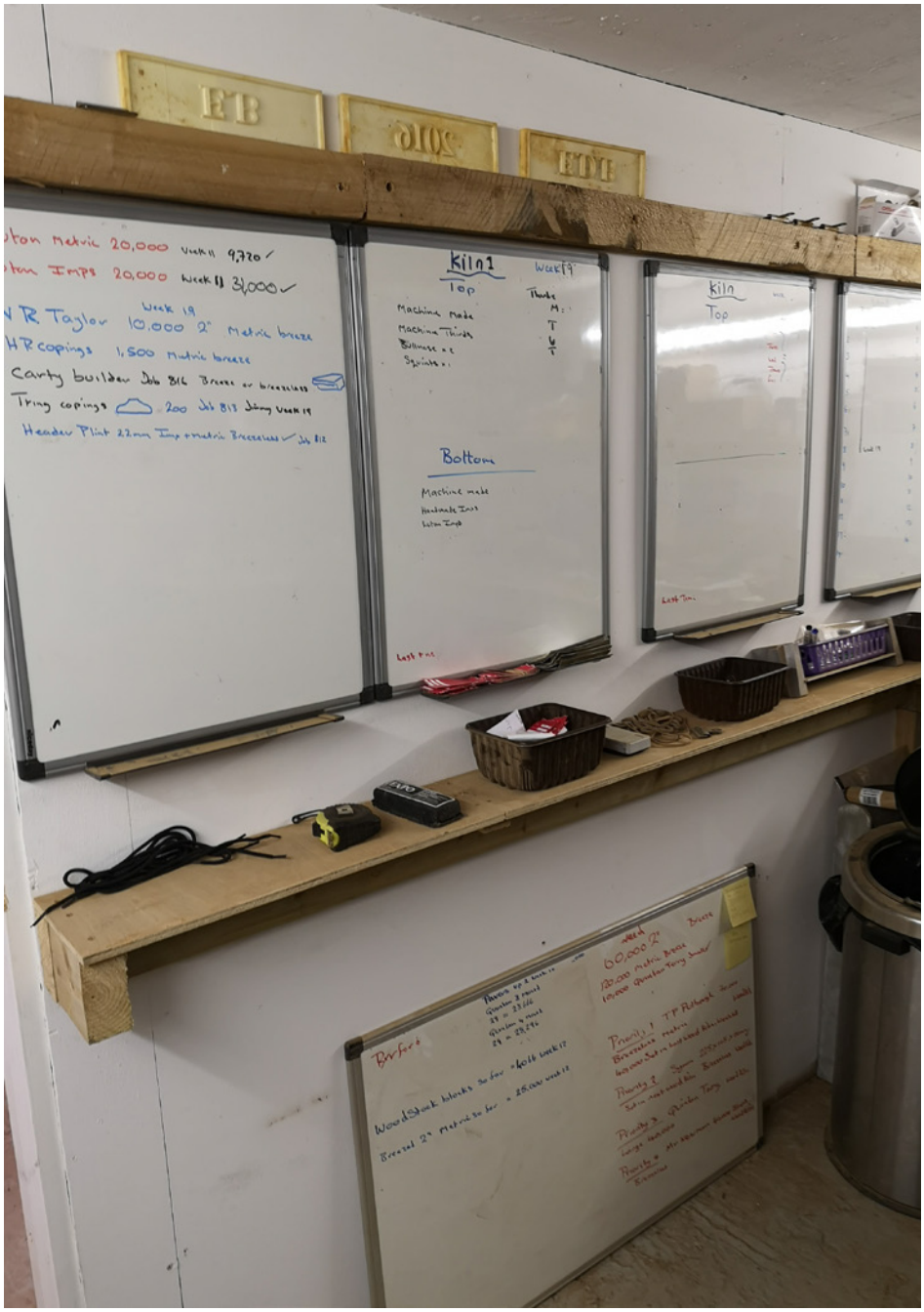
This is the fifth boiler located in an adjacent room.

Space in this room is much tighter but it works.

View of the insulated walls and HVAC vents in the drying room.

There are two 8 foot units in the back of the room that circulate air.

Behind the scenes. How they keep track of the operations.




If things aren't kept organized or the workers don't know exactly what they are doing they could lose months of work at a time.

These are shoulder bricks that are specially made to be used for carvings. The clay is put into liquid form before drying.

Many of the specialty bricks and orders are kept in storage here next to the heritage matching area to prevent confusing from other orders.

Showing the gradient of colour that comes from firing in different areas of the kiln. Hottest is brown, coldest is orange.

They do a lot of custom date bricks and ornamentation.

They have recently started to test different storing and stacking methods to prevent damage to the bricks.

When dealing with highly detailed bricks they want to ensure the packaging and transportation goes smoothly to prevent loss.

Road that leads to the biggest clay pit.

Recently acquired around 200 of these concrete retaining walls that are built in segments and can be easily moved around by forklifts.