Report on Significant Drainage Windmill Remains within the area under consideration for the Water, Mills and Marshes Landscape Partnership. Known technical and historic details.

# **Tunstall Dyke**

**Tower Mill:** Complete tarred tower, roofed over. Empty except for floor beams, but scoop-wheel, shaft and cast-iron pit wheel remain. Had fantail, but few details known.

Deserves to be maintained.

**Smock Mill:** 2-storeyed stump of octagonal smock mill, roofed. Maybe built early 1900s. Had a turbine pump, but few details known.

Rare remains of a smock mill in Norfolk, the only other smock drainage mill being at Horning Ferry, converted to a dwelling.

#### **Acle New Road**

**Kerrison's Level:** Tarred tower mill with original weather-boarded cap. The tower is banded and reinforced with iron, and has been raised. Probably a former tail-pole and cloth-sailed mill raised and upgraded to fantail and patent sails. Scoop-wheel and shaft remain, with damaged cast-iron pit-wheel. Upright shaft missing. Windshaft in place, but sans brake-wheel. Probably an early mill, but little history known.

Deservedly preserved, and should be maintained.

#### **River Bure**

## Upton, Black Mill, Tall Mill, west bank.

A tall, tarred tower mill with its original cap, gallery and rebuilt fanstage. The tower is encircled by five iron bands to prevent cracking. The tower has been heightened twice, the last time by Smithdale who made the cap, which incorporates a cast-iron weather-beam and rollers underneath. There is no main machinery left apart from the partly-dismantled wooden clasp-arm brake-wheel and the windshaft. The floors are original, and in good condition, the mill having long been used as a holiday home.

The tower bears the date 1800, which is probably the date of building. In its last two forms, the mill had patent shuttered sails driving a turbine pump, and a fantail to turn the cap. Originally it would have been a cloth-sailed, tailpole winded mill with a scoop-wheel.

The mill is well kept as a family holiday home.

# Oby Mill, Davey's Mill, Upper Davey's Mill, Wiseman's Mill, east bank.

A squat red brick tower mill with a shallow, domed reinforced PVC roof, through which the wind-shaft protrudes. The tower as been raised a little, and used to bear the date 1753 in copper numerals until they were stolen.

Internally, the former wooden brake-wheel has decayed away. The wooden upright shaft is in place with a cast-iron wallower and broken iron crown wheel. The countershaft still carries its cast-iron bevel pinion, and the shaft goes through the wall to terminate in a coupling above the turbine pump chamber. The decayed beams of the floors still remain.

The derelict engine-house adjacent housed an oil engine that could drive the pump if the sails were becalmed. Various pieces of machinery and cap lie about outside and are stored inside.

Until the late1980s, the mill was a picturesque derelict with remains of stocks, cap and fan-stage. It was dismantled by a previous owner for safety's sake with the intention of restoring it, but this never happened despite an EH grant being offered. Since then it has changed hands twice.

The mill would have been cloth-sailed and tailpole-winded in its earliest form, but was raised and modernised by Rust, incorporating a "shot" curb with an independent floating ring of rollers. The cap frame was original, reinforced to carry patent sails and a fantail. The tower is built from fairly standard bricks, and is 2 feet thick at the bottom, other early mills being thicker and their bricks thinner, however, the C18 date may be genuine. It stopped work by wind around 1933 when the sails and fan were removed. The oil engine ceased working around 1958, when the mill was abandoned.

The new owners have expressed the intention of keeping the mill as it is, and converting the engine house to a cafe. The mill deserves to be conserved at least. It has been measured and recorded by millwrights Richard Seago and Vincent Pargeter, and could be accurately restored if funding were available.

# Upton Dyke, "Palmer's Mill" west bank.

A small hollow-post "skeleton" mill complete with four spring sails, winding vane and piston pump. The mill lacks shutters, but is in good condition and is often set to turn its sails by nearby boatyard staff. Sail springs and piston are stored and not on the mill at present.

Originally built at Acle, it fell into disrepair, and was moved by millwright Richard Seago to its present site and restored 1978-80.

This is the sole survivor of many small vane-winded hollow-post mills built to drain small areas of marsh in Broadland.

The mill is in good condition, and is maintained by Eastwood Whelpton Boatyard. Care of this important mill must continue.

# Clippesby Mill, Lower Davey's Mill, east bank.

A medium-sized red-brick tower mill with its original cap and gallery. The tower has been heightened, but the taper continues, so it is not immediately evident. There is an unusual string course of bricks above the doors. The mill has the original wooden clasp-arm brake-wheel and cast-iron wallower on a pine upright shaft. The spurgeared cast-iron crown wheel survives, but the former wooden pit wheel, shaft and scoop-wheel are missing. The scoop-wheel chamber still exists. The original floors are in place.

Formerly a cloth-sailed tailpole-winded mill of 18<sup>th</sup> century date, the tower is 3 feet thick at the bottom, and built from non-standard thin bricks. It was raised and modernised by Rust, maybe about the same time as Oby Mill. Around 1924, the mill was again refitted, this time by England of Ludham, who renewed the cap, sails and fantail and added a gallery. The cap has no centring wheels, the rollers being almost spherical, running in the trough-section cast-iron curb plates. Englands often fitted such curbs when modernising a mill. The top floor bears evidence that a centring "well frame" may have been used in its early years.

The mill ceased working in the late 1930s, and was converted to a holiday home around 1958. The owner, Vincent Pargeter, has maintained the mill since 1988, and has carried out various repairs including rebuilding the curb and top floor and repairing the cap frame. The cap will be completed, and sails and fantail added as time permits.

## Acle Causeway Mill, west bank.

Two-storied stump of a red brick tower mill with a flat roof. Empty of machinery and now redundant. Not much history known, but converted to engine power by Smithdale. RW refers to it erroneously as "Thrigby, Charlie Waters' Mill"

Deserves to be maintained.

# Stokesby, Commission Mill, north bank.

Medium-sized tarred tower mill, full height, with a flat roof. Contents unknown, but probably has original floors. Scoop-wheel gone. Maybe built by Rust (RW), but the former cap, patent sails and fantail were by Smithdale, and they may have built it.

Adjacent to cottage, and has been maintained over many years. This deserves to continue.

# Stokesby, Old Hall Mill, Dack's Mill, north bank.

Short, full-height, tarred tower, unroofed. Empty except for floor beams, those under first floor appearing to be old oak cap sheers, re-used. Working before WW2, but deliberately dismantled. Was a tailpole-winded, cloth-sailed mill with some archaic gearing and had a scoop wheel. A trundle wallower from this mill used to be displayed in the Bridewell Museum in Norwich, but its present location is unknown.

Incomplete mill, but a good tower that deserves a roof to protect it.

# Stracey Arms Mill, Arnup's Mill, south bank.

Tall, preserved, red-brick tower mill with original cap, gallery and fanstage. Had clockwise patent sails driving an external turbine pump. Built by Barnes in 1883, and appears to be as-built. Has complete coeval cast-iron machinery with wood-to-iron cogs and cast-iron shafts. Live curb with rollers. Recent lean has been corrected, and working restoration is planned by NMPT.

Deservedly preserved.

# Six Mile House Mill, Lake's Mill "Cantley Marsh", south bank.

Medium sized tarred tower, roofed over, but roof damaged. Noticeable lean to southeast. Floor beams are complete. Wooden upright shaft in situ with cast-iron crown wheel, wallower missing. Cast-iron mortised pit-wheel on iron shaft with iron scoop wheel centre. Remains of cap, brake-wheel, windshaft and sails remain on site. Wooden bray post setup for upright shaft bottom bearing.

Abandoned before WW2, and allowed to decay. Retained 4 sails into the 1980s, but then dismantled as dangerous. The triangle linkage on the sails was different to most others in the area.

According to Rex Wailes the mill was rebuilt in the 1870s, the red bricks being marked "drainage". The reconstruction was probably by Rust: W. Rust, Stalham being cast on the sluice door. The brake wheel and wallower were wooden clasp-arm wheels adapted from earlier compass-arm wheels of very archaic design, and re-used in the reconstruction. The wallower had round pegs projecting upwards to engage with the square-cut brake-wheel cogs. Parts of these wheels remain, and have been measured, photographed and recorded.

An incomplete, but significant mill, having machinery and remains of early gearing. Deserves a better roof etc. at least, and better protection. Accurate restoration would be possible as records and removed parts exist.

## Runham Swim, Child's Mill, Commission Mill, north bank.

A medium-sized, well-battered, tarred tower mill with an authentic reconstructed cap, live cast-iron curb and a working fantail. The cast-iron wind-shaft lacks a brake

wheel, which was of wooden clasp-arm construction. The wallower and upright shaft are of cast-iron, but the crown wheel and pit wheel are missing, having been broken up for scrap. The scoop-wheel was internal, and its chamber remains empty. All floors are intact.

Rebuilt by Smithdale in mid C19 on a slightly different site, the mill worked until about 1937, but subsequently the patent sails were dismantled to bare stocks, and the fantail removed. The mill then decayed until restoration by NMPT and the owner in 1983. Work continues.

The internal scoop-wheel was an unusual feature.

An important mill. Restoration should continue to completion.

# Runham, Perry's Mill, Brandford's Mill, south bank.

A small, tarred tower mill with a temporary aluminium cap, fitted by NMPT in the late 1980s. The canister has broken from the cast-iron windshaft, but the mortised iron brake-wheel is intact inside the cap. There is a cast- iron wallower, upright shaft and mortised crown wheel. The external turbine pump is complete with its drive. The upper part of the pump casing and its lid is missing. Leans slightly.

The tower has been raised slightly, and the mill was probably a tailpole-winded, cloth-sailed mill before being upgraded to patent sails and fantail winding with a live curb when raised. This was probably carried out by Barnes about the same time as they built Stracey Arms, as their name is cast on the upright shaft.

An important mill with machinery. Deserves restoration

# Five Mile House Mill, south bank.

A tall, tarred tower mill with a temporary aluminium cap on original cap frame, fitted by NMPT in 1988. There is a mortised cast-iron brake-wheel and a pine upright shaft complete with cast-iron wallower and spur-geared crown wheel. The mortised iron pit-wheel is mounted on an iron shaft which incorporates two flexible couplings to transfer power to the scoop-wheel which is separated a little from the mill tower. The scoop-wheel hubs are in place. Most floor beams are in situ, and also some parts of the fantail gearing removed when the temporary cap was fitted. Wooden bray post setup for bottom bearing of upright shaft. Leans slightly.

A date stone records W.H.W.1849, probably the building date. This mill may have been built by Stolworthy of Yarmouth whose name appeared on the sluice door, now missing. Stolworthy also built Berney Arms Mill, which has a separated scoop-wheel

The mill was unusual in having had clockwise sails, and a separated scoop-wheel. It also had a fantail and a live curb.

An important mill with machinery. Deserves restoration.

# Mautby Mill, north bank.

A medium-sized red-brick tower mill with a boarded dummy cap and gallery, bare steel stocks and a fan platform, but no fan. This is an early tower with very thick walls, probably C18. All machinery has gone, but what remained before conversion was wooden. Unusually, the final drive from the fantail was by a spur pinion rather than a worm.

The mill was converted into a house in the early 1980s, and has a large pantiled extension built on. The cap shape is not accurate, and the gallery not original.

Although inhabited, the restored sails and fantail were allowed to decay and have been removed.

Incomplete, but preserved as a dwelling. If the cap needs rebuilding in the future, maybe a more accurate, rounded shape could be introduced?

# Ashtree Farm Mill, south bank.

A small, tarred tower mill with an authentic cap, sails and working fantail. All cast-iron internal machinery, large wheels wood-cogged and the scoop wheel are intact and workable. Wooden bray post setup for upright shaft bottom bearing. Cast-iron weather beam and live curb. The sails lack any shutters, but have striking gear. Some timber from an earlier mill incorporated in the floors.

Rebuilt by Smithdale in 1912, ceased working in early 1953 when the canister broke from the windshaft. The mill stood derelict until the tower was jacked level in the 1990s and finally restored by the NMPT in 2006 under the Lottery-funded "Land of the Windmills" scheme.

Deservedly preserved.

## River Waveney.

## Somerleyton Marshes, east bank.

Single-storey stump of tarred tower mill with conical roof.

Turbine, but no machinery. No details known.

Very incomplete, but deserves conservation.

# Herringfleet Mill, east bank.

Small tarred octagonal weather-boarded smock mill with cap, dead curb, cloth sails and tailpole winding. Scoop wheel with tarred vertically boarded hood. Complete, and in working order, but in need of much repair due to neglect. Some foundation problems.

Internally, the machinery is complete. The brake wheel is of wooden clasp-arm construction, and the wallower is of solid wood with spur cogs – a rare and archaic form of gearing. The upright shaft is wooden, and carries a cast-iron crown wheel. The pit wheel is of cast-iron, mortised for wooden cogs, and is carried on an iron shaft.

Built circa 1840, the sluice door bears the name of Barnes of Reedham who may have been the builder. The pit-wheel etc were renewed in cast-iron by W.T. England of Yarmouth, that name being cast on the pit-wheel.

A very important mill. This is the only complete full –sized smock drainage mill remaining in the UK. There were many hundreds of such mills in the Broads and Fens in the 17<sup>th</sup> and 18<sup>th</sup> centuries.

Until recently, the mill was leased from the Somerleyton Estate and maintained by Suffolk County Council. On the recent expiry of the lease, it was not renewed, and the mill is in need of repair. The future of this precious mill is, therefore, in doubt. It must be repaired and its future secured.

## St. Olaves, Priory Mill, east bank.

A boarded-in, small, square skeleton smock mill on brick piers with a cap, live curb, shutter-less patent sails and a working fantail. All the machinery is complete, and made of iron. The scoop-wheel is internal.

The mill was built circa 1910 by England of Ludham to replace a smock mill. This was the last drainage mill to work on the Broads, ceasing late 1950s. Restored by NMPT, having been tail-winded and losing its cap in 2008. The water lanes still need repair, and security fencing is still in place.

An important mill, one of only three mills of this type in UK.

## Fritton Marsh Mill, east bank.

A small tarred tower mill with a temporary pitched metal roof over the original cap frame. Live curb.

Iron windshaft carries a mortised cast-iron brake-wheel. Iron wallower and crown wheel on wooden upright shaft. Wooden pit-wheel on wooden scoop wheel shaft. Floors in place. Has wooden bray post setup for upright shaft bottom bearing.

Built by Martin of Beccles circa 1830, with patent sails and a fantail. Final drive from fantail to the curb was by spur pinion to cogs on top of the curb. Latterly set up for the original scoop-wheel to be driven by a tractor via the pit wheel..

An important mill with some wooden machinery. Deserves to be fitted with a better cap and maintained.

# Toft Monks Detached, Spencer's Mill, Haddiscoe Island, west bank.

Medium sized red-brick tower mill. Dummy black boarded cap with gallery, fanstage and original wind-shaft in place. Converted to a dwelling in 1980s. Some parts of iron machinery remain on site.

The cap shape is not authentic, and there was no gallery around it. Until the early 1970s, the mill carried 3 shutter-less patent sails, fanstage, all machinery and scoop-wheel. The brake wheel and wallower were both wooden, with clasp arms, the wallower having spur cogs like Herringfleet. The brake-wheel cogs were bevelled inwards to match. May have been a former cloth-sailed, tailpole-winded mill.

Now incomplete, and maintained as a dwelling.

## Toft Monks, Pettingill's Mill, Haddiscoe Island, west bank.

Squat, short, tarred tower mill. Full height with slipped flat roof. Leans somewhat. Complete scoop-wheel with damaged hood. Adapted to take drive from a tractor outside in adjacent shed. Original machinery missing, except for some parts stored inside.

This was a cloth-sailed, tailpole-winded mill built 1795-1825, and working by wind into the 1940s, latterly fitted with a pair of patent sails from nearby Caldecott Mill. The mill was subsequently stripped down and adapted for a tractor to drive the original scoop-wheel.

The mill cap was centred by a "well-frame" suspended from the cap frame, just skimming the top floor of the tower. This located with an iron collar built into the floor, and this collar still survives. Such "well frames" were used in Lancashire and Wales, but this is the only significant vestige of one in Eastern England. They can also be found in Belgium and Flemish France.

An incomplete mill, but important because of the evidence of the very rare "well frame." Deserves to be re-roofed at least, and protected.

# Fritton, Caldecott Mill, east bank.

A medium sized tarred tower mill, unroofed. Built late 1800s, ceased working 1930s, sails and fantail removed, and left to decay. The mill had patent sails and a fantail, and drove a scoop wheel.

The mill was fitted with an aluminium temporary cap by NMPT. It had complete machinery, but was set on fire by vandals in the 1990s and burnt out. The mill was insured, and local millwright, Richard Seago was commissioned to rebuild it with a new cap, floors etc. This proceeded until the owners became insolvent, and the work was discontinued. The tower had been partly repaired, with new floors and bray post setup, and was protected by a temporary roof. This roof has now blown off and the interior is at risk. All surviving original parts of the mill, together with the wind-shaft, are still stored in the millwright's yard, but no prospect of work continuing.

Deserves, at least, re-roofing.

#### Belton, Black Mill, east bank.

A small convex-walled tarred tower mill with a temporary conical cap, empty of original machinery. Formerly a cloth-sailed, tailpole-winded mill with dead curb and a scoop wheel. Rebuilt in 1907 by Hewitt of Berney Arms (RW). The dilapidated cap with cast-iron wind-shaft and wooden brake-wheel removed around 1990, present whereabouts unknown.

Incomplete, but deserves maintenance.

#### River Yare.

# Buckenham Ferry, north bank.

Red brick tower, unroofed. Raised after settlement, and now slightly truncated. No machinery remaining.

Probably raised and refitted by England of Ludham.

An incomplete mill, but deserves protection.

# Hardley Mill, south bank.

Tall restored red-brick tower mill in working order with working ten-bladed fantail and partly-shuttered patent sails. Internal turbine driven via iron and wood-cogged gearing with wooden upright shaft.

The mill is dated 1874 TWBPB on a date stone. Re-fitted by England of Ludham in1924 with sausage-shaped rollers under the cap running in a troughed curb, but tail-winded and sails blown off during WW2. Adapted for tractor drive to help clear the 1953 floods, then abandoned. Leased by NMPT, and restored 2009 by the initiative of Peter Grix.

An important, restored mill.

# Limpenhoe Mill, north bank

Medium sized tarred tower mill unroofed, and with vestiges of cap frame, live curb and broken wind-shaft exposed. Scoop wheel intact. Remains of floors inside, and wooden upright shaft with cast-iron wallower and crown wheel. Cast-iron wood-cogged pit wheel on iron wheel shaft. Wooden bray post setup for upright shaft bottom bearing. Derelict, so at great risk.

Built by William Thorold in 1831, and the only known example of his work. The canister is broken from the wind-shaft, presumably causing its abandonment. The fantail vanes were removed, and it was left to decay.

Has some machinery and deserves roofing etc.

# Norton Staithe Mill, south bank.

Small, tarred tower mill with boarded cap and scoop-wheel hood. No machinery. Converted into a weekend cottage. Probably built by Barnes of Reedham (RW) 1863, and worked late into 1940s. Dismantled, stripped out and fitted with a conical roof. Present cap with gallery, and scoop-wheel hood are restorations.

Very incomplete, and preserved as a dwelling.

# Norton Marshes, Boyce's Dyke, south bank, near road.

2-storied stump of tarred brick tower mill with conical roof. No machinery, but had a scoop-wheel. Probably adapted by Smithdale of Norwich to be driven by steam engine, then abandoned. Built by Drainage Commissioners when the marshes were enclosed.

Very incomplete, but deserves conservation or re-use.

# Reedham, Seven Mile House, Polkey's Mill, north bank.

Medium-sized tarred tower mill, fully restored and workable. The mill was repaired from a derelict state by NMPT under the "Land of the Windmills" scheme. The patent sails turn clockwise and drive a scoop-wheel in a white-painted, boarded hood.

All the machinery and shafts are of cast-iron except the upright shaft, which is of pine. The large wheels are cogged with wood. The mill was upgraded by England of Yarmouth in the 1890s with a live curb, and appears to have been raised twice.

Formerly a cloth-sailed, tailpole winded mill with original cap frame, it also contains some timber from a smock-mill, re-used as floor beams and joists. Has cast-iron arch for upright shaft bottom bearing/scoop-wheel shaft bearing.

An important mill, showing much alteration during its working life, and even parts of its predecessor. Deservedly preserved.

# Reedham, Seven Mile House, North Mill, north bank.

Very small tarred tower mill, unroofed with no floors. Some brickwork has fallen down, and the tower leans. Formerly had a scoop-wheel and a fantail.

Built circa 1830, and probably abandoned late C19 when tenants left.

Very incomplete, but deserves repair and protection as part of the important Seven Mile House group.

## Reedham, Seven Mile House, Cadge's Mill. north bank.

Large tarred tower mill with authentic cap and windshaft. Floors inside, but no machinery except the wood-cogged cast-iron brake-wheel. Chamber for a large internal scoop-wheel survives. New cap fitted by NMPT under "Land of the Windmills" scheme incorporating original material. Live curb.

Built by Smithdale of Norwich, sails and fantail dismantled late 1930s.

An incomplete mill, but part of the important Seven Mile House group.

# Chedgrave Detached, Steven Hewitt's Mill, Six Mile House Mill, Haddiscoe Island, south bank.

Squat, tarred tower mill, unroofed, with cap frame and wind-shaft exposed. A former cloth-sailed, tailpole-winded mill with floors inside and dead curb. Has decayed wooden clasp-arm brake-wheel, and cast-iron wallower on a wooden upright shaft. Wooden scoop-wheel shaft survives, but cast-iron pit-wheel and crown wheel removed for scrap since 1960s. Timber bray post setup for upright shaft bottom bearing etc.

The mill is derelict, and surrounded by water as a result of flood alleviation banking. No remedial work can take place until this situation is resolved. The cap frame is in very poor condition, and the wind-shaft may fall inside soon, wrecking the floors.

An important mill representing the early tower mill, close to the river and in the public eye. Deserves roofing and repair at least, and preferably restoration.

# Langley Detached, Harry Hewitt's Mill, Haddiscoe Island, south bank.

Medium-sized red-brick tower mill with original boarded cap, live curb and windshaft. No sails or fantail. Has original floors inside, but no machinery at all. Had a scoop-wheel, clockwise patent sails and a fantail.

Converted to a weekend cottage post WW2. Has flat-roofed extension encircling part of tower.

An incomplete mill kept as a dwelling.

# Berney Arms, High Mill, north bank.

Very tall tarred brick tower mill with a stage, partly-shuttered patent sails, cap with gallery and a working fantail. The large scoop-wheel is detached from the tower, contained within a tarred hood, and driven by a long shaft. Wooden brake-wheel, rest of machinery cast-iron. Shot curb with floating ring of rollers.

Built 1865 by Stolworthy of Yarmouth to replace an earlier mill, which was built for cement grinding and wood sawing.

Maintained and owned by English Heritage. All machinery and floors are present inside, but never worked.

The largest drainage mill, deservedly preserved by EH.

# Halvergate Marshes, Fleet Dyke.

## Stone's or Joe Kerry's Mill, south bank.

A medium sized tarred tower mill, unroofed, with remains of cap frame exposed. The tower has a distinct lean, developed since the 1960s. The canister had broken from the windshaft, which has, presumably, now fallen inside the tower.

Had a wooden brake-wheel with a small iron cog ring, cast-iron pit wheel and wheel shaft and a scoop-wheel. Present contents unknown.

An incomplete mill with machinery that deserves a roof and protection.

## Mutton's Mill, north bank.

A large tarred tower mill with a cap, 2 unshuttered sails and a working fantail. The brake-wheel is wooden and clasp-armed, a copy of the original. The upright shaft is of wood with a cast-iron wallower and crown wheel. The pit-wheel is cast-iron with wood cogs. The scoop-wheel is internal and cased-in. All floors are complete.

Built by Stolworthy of Yarmouth (RW) in 1830s, and has live curb. Ceased working before 1946 and left to decay. The cap roof and fantail were blown off, but retained its 4 sails until about 1975. Purchased by boatbuilders Paul Reynolds and David High who rebuilt it in spare time, and continue to maintain it.

An important, fine and powerful mill, saved by two enthusiasts, but both are now retired, and help will be needed in the near future.

# High's, Gilbert's or Lubbock's Mill, north bank.

A small tarred tower mill with a temporary aluminium cap fitted by NMPT over original cap frame. A former cloth-sailed and tailpole-winded mill, and the most complete example of that type. Dead curb. Centre winding beam still in place. Floors inside, and has a wooden clasp-armed brake wheel on the cast-iron windshaft. The flanged, rearmost section of the wind-shaft is missing. The upright shaft is of wood, and carries a wooden trundle-geared wallower with round pegs inserted vertically to engage the square-cut cogs of the brake-wheel. This archaic form of gearing is the only complete example now existing in an English windmill.

The wooden upright shaft also carries a cast-iron crown wheel which engages a mortised iron pit wheel carried on a wooden wheel shaft. The cast-iron scoop-wheel centre is present outside.

Built or re-fitted in the 1890s with earlier machinery. Worked into the 1940s, but then sails and tailpole removed. Derelict until aluminium cap fitted in 1980s. Leaning tower jacked level in 1990s.

Original sails and tailpole measured and drawn by R.D. Morse in 1940s. Mill measured and drawn by NMPT 2000s.

A very important mill exemplifying the early tower drainage mill. Needs maintenance and maybe restoration.

## South Walsham Mill, Howard's Mill, north bank.

A medium sized tarred tower mill with an authentic cap, gallery and fantail. All castiron machinery inside: brake-wheel and pit-wheel cogged with wood, wallower and crown wheel have integral cogs. All shafts and scoop-wheel centre of cast-iron. Has cast-iron arch for bottom upright shaft/scoop-wheel shaft bearings. All floors intact. Has cast-iron sheer extensions to carry fantail and live curb.

Possibly built circa 1840. Sluice door bears the name of Smithdale of Acle. Ceased working 1940s, and left to decay, but retained 2 shuttered sails and fantail into 1960s. Restoration of cap etc. by owner, Richard Seago, commencing in 1989 over 20 years. Fantail worked until recently, but now has new owner.

An important mill kept up to date during its working life. Needs maintenance.

# Lockgate Mill, Banham's Black Mill, Breydon North Wall.

A tarred, medium-sized tower mill with an aluminium cap over the original cap frame fitted by NMPT.

Cast-iron wood cogged brake-wheel, iron wallower displaced. Iron upright shaft, top section missing. Iron crown wheel, wood cogged cast- iron pit wheel. Iron shaft with damaged scoop wheel outside. Has cast-iron arch for bottom upright shaft/scoop-wheel shaft bearings. Floors present, but interior damaged by fire 2008. Parts of sails etc still lie outside. Live curb.

Built in 1870s by T. Smithdale of Norwich, and their schematic drawing survives. Had clockwise sails and fantail and worked into 1940s, but canister broke from windshaft. Left to decay until capped over by NMPT.

An important mill, late built and state-of-the-art. Needs repair and maintenance.

#### Abbreviations.

EH - English Heritage

NMPT - Norfolk Mills and Pumps Trust.

RW – Rex Wailes in Norfolk Windmills:Part II Drainage and Pumping Mills including those in Suffolk. Excerpt Transactions of the Newcomen Society Vol XXX, 1955-56 and 1956-57.

End of Report.

V.G. Pargeter

With corrections and additions by Alison Yardy

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