

XI

WAR AND PEACE – MUNITIONS FACTORY TO
TRADING ESTATE*Changes in the rural landscape*

The onset of the Second World War undoubtedly brought lasting changes to Thorp Arch and its surrounding area. Employment in agriculture and on the manorial estates had been declining for some years. Young people from the smaller villages were seeking largely non-agricultural employment in larger centres nearby. However, because of better and quicker public transport, not all of them were forced to leave their village homes.

In 1940 the Ministry of Supply was looking for suitable sites for munitions factories. Land in the Thorp Arch and Walton area possessed many of the essential elements required. Any proposed site needed to be well inland and not an easy prey for enemy bombers. Thorp Arch offered open, relatively flat countryside, with little risk of any accidental explosions affecting large concentrations of people and property. Another advantage was the proximity of an established LNER branch line connecting Thorp Arch to Wetherby, Harrogate and Leeds and also to the London and Edinburgh main line some eight miles away, at Church Fenton. This rail link offered transportation of raw materials and finished products, as well as giving access to the large numbers of workers needed from the surrounding centres of population. The A1 trunk road, a few miles away, also provided relatively easy travel to other parts of the country. Water supply was readily available from boreholes in the nearby magnesium limestone outcrop and additional supplies could be obtained from the River Wharfe which formed the southern boundary of the proposed site.

Public outcry

As soon as the Government's intentions became clear there was strong local opposition to the proposals. Articles appeared in the local press stating the concerns of the Wetherby Rural District Council, the local branch of the Farmer's Union and the Ministry of Agriculture and Fisheries. Local residents still remember their horror at events which would bring a large industrial complex into the heart of their peaceful rural environment. Indeed the factory was to be sited on farmland north of the River Wharfe and south of the road to Wighill. This was a local beauty spot of special significance to gipsy rovers who camped there and also to courting couples who would vow everlasting love at St Helen's Rag Well.

The 450 acre site straddled the joint parish boundary of Thorp Arch and Walton, encompassing land worked by three local farmers. However, only one farmhouse

and its buildings was affected. This was the Trust Farm tenanted by the Potts family and situated on Whins Lane about half a mile east of Thorp Arch Church. It was the only village farm still owned by the Lady Elizabeth Hastings Trust. All local protest was to be impotent in the face of the need to increase the war effort. In 1940 the property was compulsorily purchased and all the stock and farm implements sold. Mrs Potts view over the fields to the River and beyond to Newton Kyme was gone forever. Her beloved St Helen's Lane, where the branches of the trees formed an archway down to the ancient ford and rag well, was now out of bounds. Even part of St Helen's Lane, the old Roman Road of Rudgate, would be lost in the centre of the new factory complex.

Factory and workers

The Royal Ordnance Factory Thorp Arch [filling factory number eight] was built in thirty months at a cost of £5.9 million, and completed in 1942. It was officially opened by King George VI. The factory was completely encircled by an elaborate rail network with large areas of rail sidings and state-of-the-art signalling, and marshalling systems. Steam locomotives delivered the workers to the four stations on the complex; River, Ranges, Roman Road and Walton. From these points they could either walk or be taken by bus to their various work groups. Goods and materials were transferred from the steam trains to smaller flameproof diesel locomotives, which ran on the internal rail network, supplying most group areas. Because of the risks of fire and explosion, even the rails on the internal network were made of special metal to avoid the risk of sparks. In all there were twenty-five miles of railway track and nine miles of road.

Because the local working population was sparse, workers were brought in by road and rail from Leeds, Kippax, Castleford, Pontefract, Wakefield, Selby, York, Harrogate, Knaresborough, Ripon and even Hull. Some workers used Thorp Arch Station itself and many others travelled by bus. Local employees could also cycle to work.

At its height, the munitions factory employed over 10,000 people, working in over 500 buildings of various sizes. The workers, mostly women, were organised in three shifts covering twenty-four hours per day seven days a week. It must be remembered that all unmarried women between the ages of twenty and thirty [extended to age fifty-one by 1943] had to register for a form of conscription and could be directed into whatever job the Government wished. Those taking non-combatant jobs, such as working in munitions, received less pay than the men they replaced. Wages for women were thought to be quite good at the time, about seven pounds a week. Night shift workers (10:00pm-7:00am) were paid extra and received the princely sum of ten pounds per week. All workers received an extra ten shillings on the King's birthday. Those travelling from Harrogate by bus were charged three shillings per week. Married women were also employed during the war. The increasing employment of women was part of a long process which changed ideas about the nature of employment. While it would be wrong to suggest that droves of local people were employed at the new factory, there were a significant number and this was one of the catalysts that would begin to increase opportunities for more varied work in the area.

Accommodation

Housing was provided in the local area in the form of 150 purpose built semi-detached, brick, two and three bedroomed bungalows. These were sited on the West End Estate in nearby Boston Spa. Some housing was provided outside the perimeter fence of the factory on the road to the station and consisted of four large detached houses for senior staff and seventeen bungalows. There was also a wooden hostel on site and further hostels in Wetherby.

The daily round

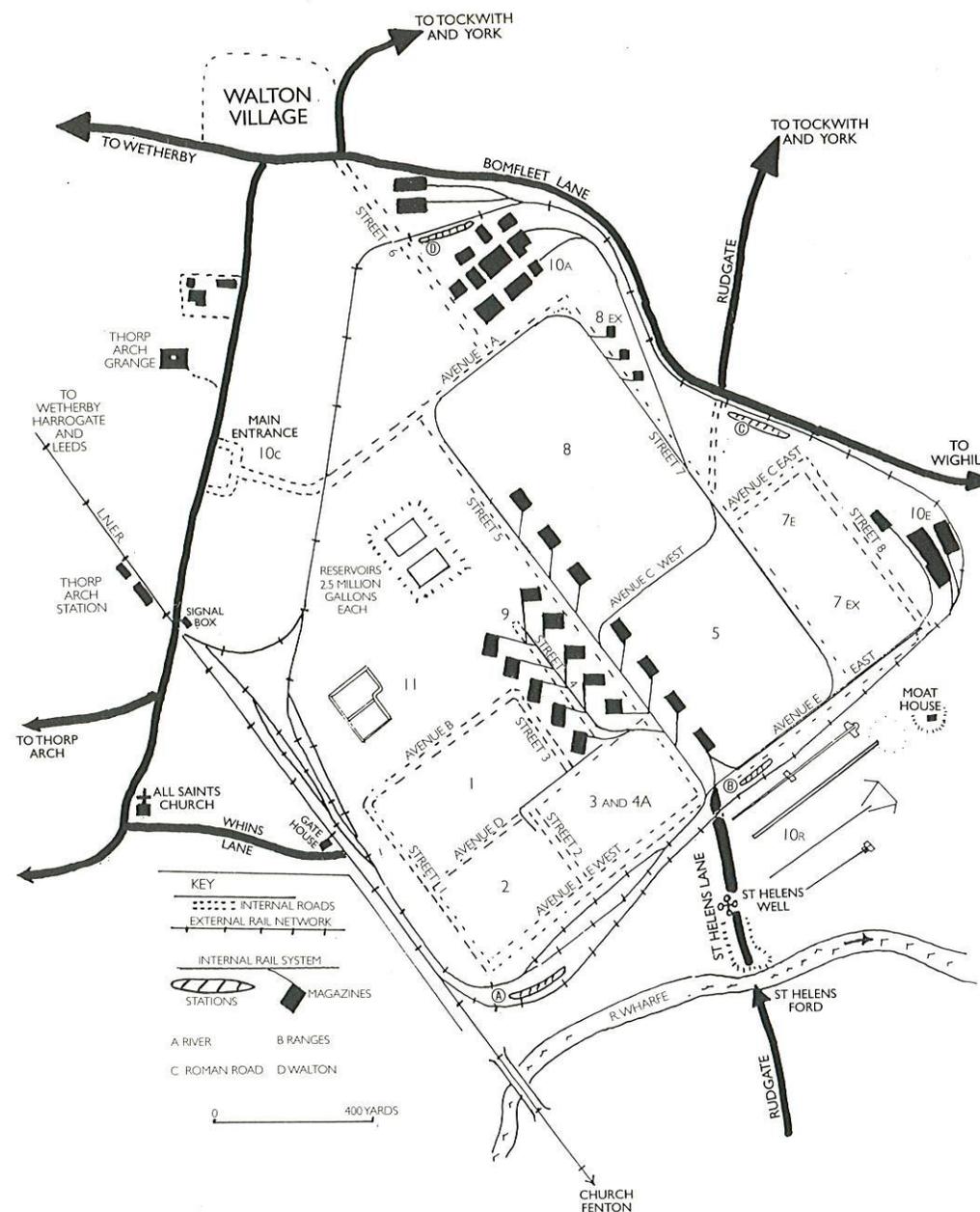
Before starting work at the ROFTA, workers were given a thorough medical. Some workers received training at the training school but others were given on the job training. They learned correct procedures for dealing with explosives, as well as the strict safety and security precautions in force throughout the site. Workers all had to show their passes and were subject to random searches on both entry and exit. Smoking materials were handed in at the contraband hut near the entrances. Personal effects such as handbags, metal objects, hair clips, combs and foodstuffs were not allowed in the working areas. Money was put into a small bag round the neck and, in the case of workers in the explosives magazines; it was later slipped inside the neck of their white overalls.

The Beauty Parlour

All operatives first reported to the separate shift house facilities for men and women. Each shift house had a 'dirty' and a 'clean' side, separated by a line on the floor. Special rubberised shoes or galoshes were worn before entering the clean working area. Outer clothes were put into numbered bags and replaced by thick, fire resistant serge overalls. Women tied their hair back from the face with a turban which also covered their ears. Rings were taped-up if they could not be removed. The ladies had their own beauty parlour, where they could wash and scrub their nails clean. Barrier cream was used to put on their faces. This served as a mask to prevent the skin from absorbing the explosive powders which pervaded their work stations. Even so, ladies working in such areas were famous for their yellow skin, coloured by constant exposure to the yellow powder. Face powder was also applied with cotton wool and red lip salve used in place of rouge. It could take twenty minutes for women to prepare for work. At the end of the shift workers in some areas had to report to the nurse so that powder could be bathed from their eyes.

Safety precautions

It was imperative that no dust, grit or abrasive substances found their way into buildings as the smallest spark could cause a major explosion. Cleanways were gritless asphalt paths, bordered by dust absorbing grass plots. They served as foot and trolley ways between the different buildings and were kept immaculately clean by swilling them down with water. Any deviance from set procedures, especially those resulting in accidents, was always thoroughly investigated. Random checks were also made to ensure that correct handling procedures were being followed.



Sketch of Royal Ordnance Factory Thorp Arch, site layout from original plan
 Courtesy: HGB / Higgs and Hill

The Groups

The Royal Ordnance Factory at Thorp Arch was organised into discrete, largely self-contained sections called Groups. Group facilities⁷² included office blocks, canteens, changing and rest rooms, toilets, surgeries, fire points and air-raid shelters. Many buildings were supplied with compressed air. Groups were linked by roadways, walkways and sometimes by the internal rail network.

The site was classified as a filling factory and each Group carried out specific filling tasks designed to produce an explosive chain of events which would either propel a missile from a gun barrel or cause the detonation of a bomb.

GROUPS	AREA (ACRES)	BUILDINGS	FUNCTION	SPECIAL FEATURES
Group 1	13.5	48	Lead Azide and filling of detonators and caps	Small buildings, a few surrounded by earth mounds, road access, loading bays, some under cover
Group 2	19.5	37	Composition Explosive	Spaced buildings, bathhouse with shower cubicles. Rail access to loading platforms
Groups 3 and 4	21	76	?	Road and rail loading bays
Group 5	52	90	Cordite. Filling, bombs and detonators	Some of the largest buildings on site [second largest group] well dispersed. All round road and rail access
Group 7E and 7EX	26.5	98	Cordite filling, bullets, 20mm cannon shells	Buildings close together, loading platforms for road and rail
Group 8 and 8EX	?	?	TNT Filling of high exp.- Shells. Blockbuster bombs	Spaced out buildings, Surrounded by earth walls, road access, rail round outside, covered loading platforms
Group 9	24	12	Filling with high explosives	10 reinforced concrete magazines. Earth mounds to roof level. Road and rail into each Magazine
Group 10A	30	37	Services group North side and goods entrance	Machine Shops and stores. Structural, heat treatment, vehicle and tailors' workshops, loco sheds, firestation and weighbridge

GROUPS	AREA (ACRES)	BUILDINGS	FUNCTION	SPECIAL FEATURES
Group 10C	13.5	48	Main Entrance. Administration Area. Firestation and Canteen for 640	Offices for planning, drawing, accounts wages, production and stores. Also chemical lab and main surgery.
Group 10D		21	Housing	4 two-storey detached houses. 16 semi-detached and 1 detached bungalow.
Group 10 E1	7	9	2 boiler houses	
Group 10G	14	16	Building works	Woodworking machinery shop and wood store
Group 10L	2.5	2	Laundry	
Group 10R	25	40	Firing Ranges	Offices and workshop. Facilities for testing flight, velocity and accuracy of projectiles
Group 11 A, B, C & D	18.25	28	Burning ground and proving yards	Destruction of faulty ammunition and contaminated materials

Explosives

Apart from TNT [trinitrotoluene], other explosive chemicals handled in the factory included unstable materials such as lead azide, amatol and formulate of mercury. The latter was so potentially dangerous it was transported in containers immersed in water to keep it cool. Cordite was a cocktail of chemicals which was dried and extruded into thin cords of plastic like material. This was used in shells, machine gun bullets and in the 20mm cannon shells used by aircraft such as the Spitfire fighter plane. Large, 1000lb bombs contained separate sections. One section contained composition exploding powder [CE], another an explosive in the form of pellets.

The late Mrs Angela Trueman remembered her work at ROFTA and wouldn't have missed it for the world. She first worked on Group 1 where the girls were involved in filling caps for rifle bullets. The arrival of fresh grey powder, fulminate of mercury, was heralded by a knock on the door. The explosive was passed through a cubbyhole and on to girls who would fill the small caps with powder, compressing it by using a small machine with a handle. The material had to be level with the top of the cap. Other girls would check that there was no loose powder round the edge. The caps were then sealed with varnish and taken to the drying house. Girls were seated on chairs within the confines of small steel partitions which separated each individual worker. Work on Group 5 involved placing thin strips of cordite into bags about twice the size of a bag of sugar, made of a cotton like material. Stitching to seal the bags had to be perfect, and girls could only handle the strangely scented cordite for three hours before it began to make them feel very sleepy. The cordite

was mainly for use in shells for the navy. Work on Group 8, inside the large magazines, involved the filling of large high explosive bombs. As far as Mrs Trueman could remember, a mixture of explosives was used. Grey formulate of mercury powder was weighed and put into a steamer. The material came out as a liquid and it was then dried and broken up into pieces. These were mixed with creamy coloured pellets and poured into the casing. The bomb cases were supported by frames mounted on trailers, and men filled them by climbing a series of steps. Gerry Appleyard clearly remembers that large bombs were regularly transported through Walton village. Heavy lorries, with red flags flying, rumbled through the village at all hours of the day and night. These bombs were taken for storage to Champagne Whin, about a mile and a half north of the factory on Springs Lane. Transport from nearby airfields would pick up their supply of bombs from this high explosive store.

Buildings

During construction of the factory, large mounds of earth were used to encircle the perimeter, giving some degree of protection to the surrounding area in case of an explosion. Many of the buildings, especially the large magazines on Groups Eight and Nine, were insulated by thick linings of soil piled against the walls. However, roofs were left exposed. If an accidental explosion occurred, the blast would be



Thick concrete blast wall to protect surrounding buildings. 1999

directed upwards rather than outwards, and was therefore less likely to affect nearby buildings. Some smaller buildings were also protected in this way and others had an additional cushion of a thick wall of concrete. Examples of such wartime buildings, including enclosed loading bays, are still clearly in evidence today. Many of the old magazines are covered by grass shrubs and trees. Signs on the lintels above doorways still read 'shifthouse entrance' and 'missile propellents'.

Testing

There were chemical laboratories on site for testing and monitoring the quality and accuracy of the products. The Firing Range and the Proving and Burning Grounds were situated close to the north bank of the river and near St Helen's Well and the Old Moat House. Its perimeter was protected by earth mounds. Spitfire canon shells and other projectiles were tested by firing them into sandbags. Sophisticated instruments were used to measure velocity, flight and accuracy. The burning ground was used to destroy excess and faulty materials under controlled conditions.

Air raids and accidents

ROFTA suffered very few air raids by enemy bombers. Early in the war a lone German aircraft circled the factory and dropped a single bomb. Fortunately, it fell harmlessly into one of the earth mounds surrounding the factory. The raider was later shot down near Filey and was discovered to have taken photographs of the factory under construction. In 1942 enemy bombs straddled the Marguerite Hepton Hospital. Thankfully no one was injured and damage was slight.

Air raid shelters built on the factory site can still be seen adjacent to the main road into the estate. They are built of thick grey concrete with entrances at either end. Benches and tables lined the inside walls. Hooks for clothing and gas masks are still visible. An Elsan type toilet was situated behind a curtain at one end of the shelter.

There were anti-aircraft ack-ack guns on the site. A few workers remember seeing them but no one remembers hearing them firing. One of these circular gun emplacements with its gun mounting frame can still be seen on the Moores Furniture site.

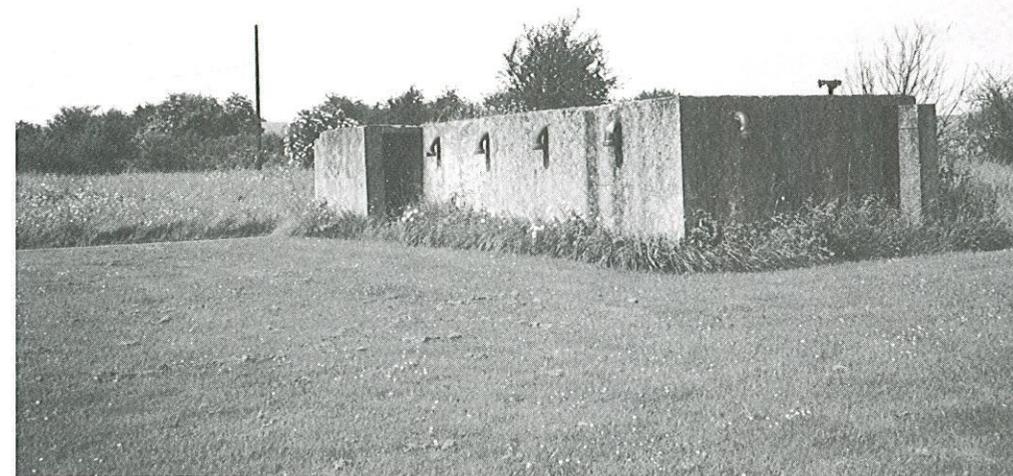
One ex worker also told of the 'Crows Nest', a small tower used by a spotter who would look out for enemy aircraft and raise the alarm. There was a water supply system in case of fire. Pumps could deliver 2,500 gallons per minute at 100 lbs per sq in pressure. Two large on-site reservoirs holding 2.5 million gallons each could be used to flood the site in an extreme emergency.

Accidents

Minor accidents were relatively common and were usually caused when workers were lax or failed to follow procedures. It is difficult to substantiate some stories involving the loss of limbs or fingers. However, considering the volatile nature of the materials handled, accidents were almost inevitable. One man was said to have lost an eye when something he was eating fell into an explosive mixture. The most commonly quoted accident occurred after 1945. A local farmer was checking on his sheep that were allowed to graze within the factory site. He leapt over an obstacle onto the grass adjoining the cleanways. Unfortunately an explosive residue on the grass was ignited and both the farmer and his dog were blown to pieces.



Even today these lintels show the wartime use of these Group 5 buildings. 1999



Air raid shelter near the main road into the estate. 1999

1945 to 1950

After the war the munitions factory ceased production and the Ministry of Supply used the site for the storing and selling surplus war materials. The rail link was still an invaluable resource for transporting items to and from all parts of the country. Many vehicles and items of equipment were sold by lot at site auctions. One story told was of a lady who wanted a motorcycle for her son. She duly attended the auction and secured an appropriate lot. When she presented her receipt to the clerk she discovered she had purchased three motorcycles! Underneath the protecting layers of grease she discovered they were unused Royal Enfields, for dispatch riders.

ROFTA reopens in 1951

The factory was reopened to provide war materials for the Korean War [1950-53]. Over 500 workers transferred from the MOS and the labour force was gradually increased to just over 2,000. Workers were again brought in from the surrounding area and the factory worked on similar lines to the Second World War. The facilities had been maintained in excellent order during their five years as a supply depot.

Thorp Arch resident, Tony Goy, remembers working at ROFTA during the Korean War. At the time it was rumoured that American money financed the reopening. Tony's working clothes were brown overalls and a pill-box hat. His main job was to fill the large bomb casings with high explosives, mainly TNT. These were heated until liquid and poured into the casings using buckets. Carbon black was one of the powdered ingredients added. When the bomb detonated the carbon black caused a pall of dense black smoke, designed to cause confusion and panic. The casings were

similar to large oil drums, and stood about four or five feet high. The fins to aid flight were added later. Don Linley recalls that the 1000 lb bombs were filled with a high explosive called Torpex, and also RDX aluminium fill.

Peter Foster from York remembers the most dangerous task was mixing explosive compounds together in small containers about the size of yoghurt cartons. Two of these unstable materials were fulminate of mercury and lead azide. Some buildings were only about the size of domestic garages, with each worker in a separate bay made of thick steel plate, about six to eight feet high. For some tasks special gloves had to be worn. Foremen and charge hands were identified by coloured armbands on their overalls, but managers wore suits.

Jack Taylor from Wetherby was in charge of plumbing and drainage. Many materials were in short supply following World War Two, and initially there were difficulties obtaining pipework and taps. These had to be made of stainless steel to prevent corrosion. To enable large-scale production of 20mm cannon shells for fighter aircraft, using production lines with conveyor belts, some buildings were joined together and re-roofed. The new cast-iron gutters had to be bonded together electrically, to ensure that any static electricity would be well earthed.

Small samples of volatile, explosive materials were regularly taken for testing. Jack vividly remembers seeing three workers walking in line en route for the laboratories. The central worker carried the samples on a tray supported by a neck-strap, and those front and back carried red warning flags. Anyone cycling along the paths was stopped and made to dismount until the stately procession had passed by. Sometimes materials were transported by small electrically powered 'dilly carts' with the driver standing at the front of the vehicle.

Birth of the Trading Estate

Munitions production stopped soon after the end of the Korean War. For a few years some of the ex-munitions workers were retained to decontaminate the site. Every building that had produced explosive material was surrounded by strips of spaghetti-like cordite, which was ignited. This also ignited any explosive residues still present. Group One buildings, which had contained dangerous volatile materials, were all demolished.

A number of uses were considered for the site including use as an Atomic Reactor Site and development as a Trading Estate. George Moore, a local entrepreneur, purchased a large part of the site and the first tenants took occupancy in the early 1960s, gradually transforming it into a Trading Estate and shopping centre.

Snapshot in 1967

A magazine article entitled 'Industrial Estate and Shopping Centre transform Thorp Arch'⁷³ described developments since George Moore's small joinery factory was established in 1959. The article mentions that light industrial occupants, including some national firms, saw the advantages of the buildings and facilities, and the availability of local labour. Retail outlets included CBA Direct Supplies, selling cut-price goods including toys, cycles, clothing, garden tools and fancy goods such as watches. Scansales Design Centre offered English and Swedish furniture at 20% to 30% discounts. Mr B J Coffey was a wine and spirit merchant who had been so successful that he had opened a retail outlet on the estate some three years earlier.

His annual turnover was £350,000, no doubt aided by offering some bottles of wine at below retail prices! The Buywell Shopping Centre included a supermarket. Weekday hours were 10:00am to 8:00pm, and Saturdays 9:00am to 6:00pm. Advertising for Buywell, Yorkshires Country Shopping Centre, emphasised that there were no traffic problems, wardens or parking meters.

Progressive Development

The location of the site was crucial. Like Wetherby in the stagecoach era, its position half way between London and Edinburgh was logistically advantageous. The development of the motorway network from the late 1950s placed Thorp Arch, with its close proximity to the A1, in an excellent position for rapid travel nationwide. Rail networks from Leeds, York and Harrogate were less than an hour away. [Unfortunately the excellent rail network, at first still in place, came under the 'Beeching' axe in the mid 60s]. Air services at Leeds Bradford Airport could be reached in thirty minutes. Excellent internal roads and services, together with ample space and accommodation, provided a tempting prospect.

Snapshot in 1978

In 1978 a local newspaper article⁷⁴ highlighted the estate's development. The sole management agents extolled the virtues mentioned above. They also stressed the availability of long ground leases and low rent [£1,000 per acre per annum] and offered a range of sites for development up to a maximum of sixty acres. It was



Goodyear occupied these buildings formerly used for filling explosives into bombs and shells. 1999

suggested that the area was particularly useful for building construction and warehousing and storage operations, including motor vehicle and container storage. There was also the attraction of a number of tenancy choices; using existing buildings, renovating existing buildings or constructing new buildings to individual requirements. The possibility of expanding at a future date would avoid costly relocation. Security services and patrols, and maintenance of roads, lighting and signposting were additional benefits. By this time national and international concerns were tenants. These included Goodyear Tyre and Rubber Company, Denys Fisher Toys, GEC, Elliott Traffic Automation, BP Educational Services and The British Library Lending Division. Smaller operators included suppliers of plant and machinery for hire, machine tools and sheet metal machinery suppliers, manufacturers of joinery products for the building trade and aluminium and non-ferrous metal stockholders.

A secondary but major attraction was the Buywell Shopping Centre, occupying the ten-acre site of what was once Group Nine. These former explosives magazines had been converted into showrooms each with a maximum display area of 11,000 square feet. At the time this giant Country Market was a relatively new concept. It was advertised as an afternoon out for the whole family in a relaxing, rural environment, but offering all the advantages of town centre shopping. There was parking space for 600 cars and a children's playground. Opening hours were 9:00am to 5:30pm on Monday, Tuesday, Wednesday and Saturday and later opening until 9:00pm on Thursday and Friday. Sunday trading regulations permitted viewing only from 10:30am to 5:30pm.



Do today's customers realise that they are entering a high explosive magazine? 1999

Four units specialised in home furnishings and fittings with a choice of items for the dining room, lounge, bedroom, bathroom and kitchen. At this time there was an emphasis on flat packed fitted furniture. Household appliances were also available together with design and fitting services. Lighting and carpets were also on site. DIY, gardening and caravanning interests were well catered for. The range also included boating and motor accessories, footwear and knitwear. There was the opportunity to purchase the weekly groceries, meat and other household products. Buywell was not specifically advertised as a discount centre, though prices were competitive and bargains were available.

Snapshot in 1985

By 1985 there were over 150 industrial and commercial tenants on the Trading Estate. The main activities were still centred around warehousing and distribution but there were also many firms engaged in light engineering and fabrication of all kinds.

The shopping centre was still prospering but the supermarket and food outlets had gone. This was no doubt due to the increased competition of out of town shopping centres which had sprung up near the local centres of population. Northern Upholstery, which had made the estate famous because of its national television advertising, occupied two units, selling a range of furniture, curtains, carpets and fittings. The range of goods, apart from foodstuffs, remained much the same though some of the names had changed. Opening seven days a week was now fully established.

Thorp Arch Estate in 1998

Today the site is managed by Rutland Management Limited on behalf of the owners, Thorp Arch Limited Partnership (TALP). They are planning a twenty-year phased development seeking to improve, extend, refurbish and build new units. It is hoped that this will meet the needs of the tenants, preserve the estate's traditional character and give due consideration to the views of local residents.

Employment on the 150-hectare site is currently running at around 2,500, and there are about ninety to 100 commercial and industrial employers on the estate.

Manufacturing includes kitchen and bedroom furniture, cubicles and paint spray booths, epoxy resins, adhesives and chemical products, space heating equipment, plastic injection moulding, grouting plant, tubular structure fabrication, general light engineering products, socket screws, joinery products and sportswear.

Commercial, services, distribution and warehousing includes: The National Library; induction and training films and videos; plant and vehicle hire; domestic appliances; lighting systems; office stationary; model making; advertising and design services; beer barrel storage and a household waste site.

Part of the northern section of the estate was sold off and is occupied by five or six similarly diverse firms.

The shopping centre still contains some of its long standing tenants such as Northern Upholstery, Buywell furniture, Bensons beds, Miller Bros, Sharps fitted bedroom furniture and a garden centre. New outlets include those selling ladies and men's fashions and footwear, general clothing, toys and electrical goods, linens and crafts, golfing accessories and pine furniture. There is also a licensed restaurant which also sells takeaway food and a firm involved in car sales and vehicle hire. In all this involves fourteen different businesses.

THORP ARCH

1998 saw the completion of Moores Furniture Group's high bay extension of 125,000 square feet. This will give extra employment prospects, bringing their total workforce to almost 1000. As major suppliers of kitchen and other furniture to the house building industry, this will help the company to remain competitive.

The face of the estate is changing, with attractive new buildings now interspersed with the wartime units.

Surely the people who expressed feelings of gloom and doom for the area in 1941 would offer a different view of the Trading Estate and its development and employment prospects for the next millennium?