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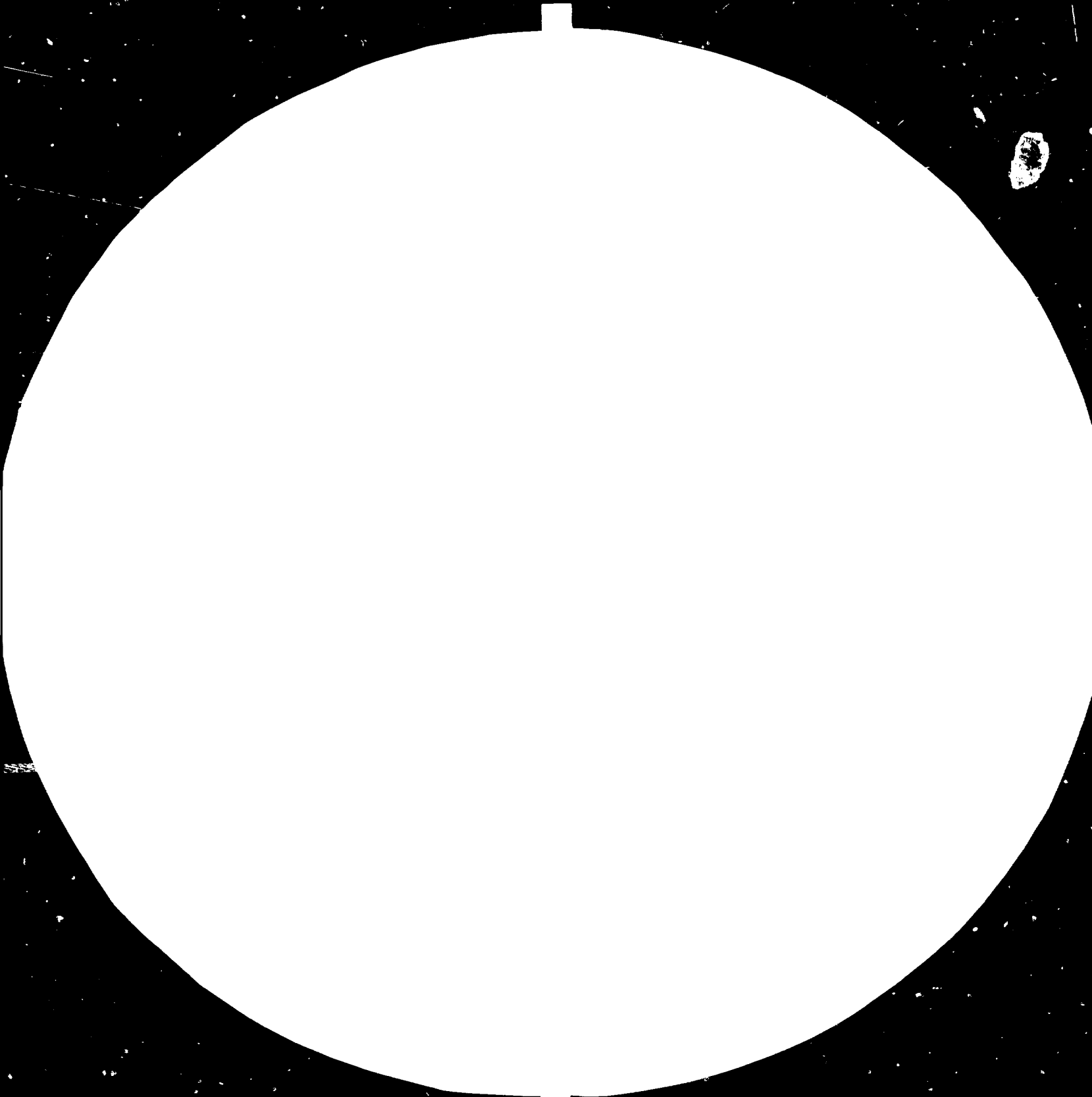
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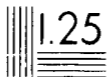
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January 1984
English

China

PROJECT FOR THE MANUFACTURE OF
ALUMINIUM DOORS AND WINDOWS IN GUANGZHOU
THE PEOPLE'S REPUBLIC OF CHINA

VISIT REPORT

DP/CRP/80/045

To Paul ANTON GmbH, Sulzbach, FRG

Report by W.G. Fancourt
Consultant Engineer
Senior Partner, WGF Partnership, Whitchurch, UK

for the

United Nations Industrial Development Organization
Vienna

This report has not been cleared with the United Nations Industrial Development Organization which, therefore, does not necessarily share the views presented

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This report details the action proposed and procedures needed to achieve the following:

- a) The changes proposed to the equipment orders on Paul Arton GmbH for Guangzhou Aluminium Windows.
- b) The clarification of all previously unresolved technical problems.
- c) Arrangements for the shipment and unpacking of equipment.
- d) Factory preparations necessary before the equipment is delivered.
- e) Installation procedures.

The design of new window and door products and the factory layout and equipment specifications for Guangzhou Aluminium Windows (formerly called the Guangzhou Steel and Aluminium Window and Door Factory) was completed between April 1982 and June 1982 as part of project DP/CPR/80/045 by W.G. Fancourt. This work is detailed in the UNIDO report dated July 1982.

A complete list (handwritten) of all equipment to be supplied for the factory was completed in Guangzhou in June 1982. This list was later discussed by UNDP Beijing and the Chinese Authorities and an extracted list of equipment to be imported was sent to UNIDO Vienna to obtain competitive quotations from potential suppliers. This second list is typewritten, undated, headed "The Guangzhou Steel and Aluminium Windows and Doors Factory Machine Purchasing List" but contained insufficient details of each item for quotations to be obtained by UNIDO Vienna. This list also contained some changes made to the original items on the handwritten list.

The services of W.G. Fancourt were retained for a short period in Vienna in early December 1982 to clarify technical questions and answer queries from three potential suppliers. The letters from W.G. Fancourt to Mr. Gardellin and Mr. Balazs dated 7 December 1982 refer.

A third machine purchasing list dated 4 December 1982 was compiled by W.G. Fancourt and used to obtain quotations. The third list contained full specifications and incorporated some suggested amendments to the second list. These changes were subsequently approved in the telex from Mr. Doss dated 10 February 1983 and the letter from Mr. Lui Luping dated 24 March 1983 both of which also requested additional spare parts to be ordered.

In April 1983 W.G. Fancourt met Mr. Li Tiequiang in Kuwait as an incidental meeting during a different mission TF/KUW/81/001/11-51/31.8A. The notes of this meeting are dated 21 April 1983 and letters to Mr. Sissingh and Mr. Chacon Puig both dated 28 April 1983 refer. These deal with the selection of supplier and further project proposals.

On 7 July 1983 the purchase order 15-3-D0649 was raised on Paul Anton GmbH, Sulzbach, FRG.

Throughout the whole period from December 1982 and January 1984 there was a large number of communications by telephone, telex and letter between Mr. O'Connell of UNIDO Purchasing Section and W.G. Fancourt to answer technical queries.

In January 1984 a meeting was arranged at the premises of Paul Anton in Sulzbach, FRG, between the Anton engineers, Mr. Wu Zhong Yao, Vice Managing Director of Guangzhou Aluminium Windows and Mr. Fei Jian Liang, Assistant to the Manager of the Business Department of the China State Construction Engineering Corporation, as interpreter, with W.G. Fancourt in attendance to assist. This meeting was to clarify any further details and is the subject of this report.

The first joint meeting was held on 23 January 1984. W.G. Fancourt left for Vienna early on 27 January to meet Mr. O'Connell on 27 January and 28 January 1984. The Chinese delegates were to attend a further meeting with Anton personnel to supply additional technical details of the "old" casement design on 27 January.

A relatively large number of minor details (dimensions, screw and hole sizes, etc.) which had previously been unclear to Anton were specified by Mr. Wu Zhong Yao. These are not detailed in this report.

All proposed items of machinery and tooling were checked against the latest drawings for the new product designs, modified in detail where necessary, and approved by all parties.

Messrs. Anton had not manufactured tooling where product details were unclear. They estimated that two weeks are required for the manufacture of the remaining tooling after clearance of details. All machines are completed at the Anton premises and are ready for shipment.

Mr. Wu reported that he had been instructed to order additional tooling to manufacture the "old" product designs in addition to the "new" designs for both the sliding window and the casement window. For the sliding window this presents little problem and changes were agreed to tooling items to produce either design.

Section 2 of the Appendix to this report lists 15 items of equipment which need to be changed at additional cost to accommodate the manufacture of both designs of sliding window and update the methods of manufacture. These changes must be authorised by UNIDO before Anton will action them. Where no additional cost is involved all further minor changes were agreed to be made by Anton and are not detailed in this report.

The "old" and "new" designs of casement window are substantially different. The corner jointing, bead positions and handle applications are totally different. These differences will require different machines and not just tooling changes to manufacture both designs by sensible methods.

There was insufficient time during the meetings in Sulzbach to detail all the changes of equipment necessary to manufacture both designs of casement. Mr. Fancourt left for Vienna on the morning of 27 January 1984 leaving the Chinese delegates on that day to hand over and clarify all details of the "old" casement design to Messrs. Anton who will produce a detailed proposal for the manufacture of the "old" design of casement windows.

It is recommended that the shipment of all machines and equipment should proceed without delay, leaving any additional items to be agreed for the manufacture of "old" casements to follow later as a separate shipment.

An alternative solution to the casements problem involving the reduction of the wall thickness of most extrusions used for the new casement design is detailed in Mr. Fancourt's letter to Mr. Sissingh dated 30 January 1984.

Section 3 of the Appendix lists five items included in the first list of equipment but omitted from the two subsequent lists. These items are considered to be desirable although not absolutely essential.

It is noted that the drilling machines for door manufacture have not been ordered.

Mr. Wu explained the preparations made to date at the factory and requested a drawing of machine positions in sufficient detail to allow fixing bolts and services to be pre-set in the factory floor before the arrival of the machinery.

It was agreed that a simpler method would be for Messrs. Anton to drill the floor for fixing bolts after the machines have been delivered and set out, and their best positions agreed. The floor will then be channelled for air and power connections to the mains by Chinese labour using a pneumatic chisel supplied by Messrs. Anton.

Mr. Wu described the compressed air mains and sub-mains which have been installed in the factory. These were agreed to be suitable but the details of the connection points proposed for each machine presented problems at the point of the coupling of German to Chinese components. The agreed solution to this was that Messrs. Anton will be asked to supply suitable fittings and valves to be welded to the air mains by Chinese labour under Anton supervision. Messrs. Anton will also be asked to supply suitable air hose to be installed in Chinese supplied iron or steel pipes (approximately 25 mm bore x 3 mm wall, plus elbows) which will be laid in the floor as conduit pipes after the arrival of the machinery.

The German machines require five conductors in the electrical connections (3 x live phases, 1 x neutral, 1 x earth) and fused isolating switches for each machine at the point of connection to the factory mains on the factory wall. It was agreed, therefore, that Messrs. Anton will be asked to supply all electrical components and cable to run power from the factory mains to each machine position. Cables will be laid in conduit pipes similar to those used for air hoses and installed by the same method after the arrival of the machinery. Junction boxes on the wall are to be installed and connected by Chinese labour under Anton supervision.

The arrangement of the factory electrical mains for the live conductors were described by Mr. Wu but the exact arrangement of the factory neutral and earth conductors was not clear. Mr. Wu is to check these on his return to Guangzhou in case additional main conductors need to be installed.

Messrs. Anton were to supply to Mr. Wu before he departed a drawing of the proposed air main connections for Mr. Wu to check the exact dimensions of the air main channels at the factory on his return to ensure that there is sufficient space for the proposed items to be installed under the cover plates. The factory air mains are approximately 90 mm diameter x 5-8 mm wall. With his reply to Messrs Anton Mr. Wu will confirm the exact inside and outside diameters of the Chinese supplied pipes to be used for air and power cable conduits. Messrs. Anton will then supply the correct size of flexible conduit to make joints.

It is unlikely that a power saw will be available at the factory to cut conduits and Messrs. Anton are to be asked to supply this item.

Bulk supplies of lubricants of the correct grade may not be immediately available in China and Messrs. Anton are asked to supply initial quantities.

Since work on the couplings to the factory air mains will proceed at the same time as the installation of machinery there will be no factory air available while the machines are being installed. Messrs Anton are thus to be asked to provide a small portable air compressor to provide air to install and test each machine.

Section 1 of the Appendix to this report details 18 items needed for the installation which need to be approved for shipment with the factory machines and tooling. By western standards these are considered not to be the responsibility of the machine supplier and have not been included in the existing purchase order.

The subject of air compressors was discussed in detail and a complete specification produced. This is detailed in Section 5 of the Appendix to this report. Mr. Wu was not sure if machines to this specification would be available in China and Mr. O'Connell is to determine the costs of importing these items in case that proves to be necessary.

Since no detailed preparations are needed on the factory floor before the arrival of the imported equipment Mr. Wu is to make sure that the floor is flat and swept clear before the machines arrive.

5. SHIPPING ARRANGEMENTS

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The shipment from Messrs. Anton will be packed as follows:

- 4 wooden cases 6.3 m long, 1.6 m wide, 2.0 m high
gross weight 1.4 tonnes
containing double mitre saws, one per case.
- 5 containers 6.0 m long, 2.4 m wide, 2.4 m high
gross weight 6.0 tonnes full, 2.4 tonnes empty
containing all other items
(the number of these containers may vary according to the
equipment finally shipped).

The cases are non-returnable. The containers are hired and must be returned to Huanpu Port on a date to be arranged at the time of collection.

The shipping terms are C & F to Huanpu Port by the shipper. UNIDO will arrange insurance. The Chinese Authorities will arrange customs clearance and transport from the port to the factory, with cranes to load and unload.

The delivery address on the cases will be:

Guangzhou Aluminium Windows

Liede Road

Guangzhou

FRAGILE

Huanpu Port

The People's Republic of China

Shipping documents will be sent by Messrs. Anton to UNIDO Vienna for onward transmission to UNDP Beijing and the factory. Mr. Wu needs shipping documents as soon as possible to arrange customs clearance.

The containers will be locked and sealed. One set of keys will be handed to the shipper, a second set will be brought to the factory by the Anton installation engineers.

The following general procedure is recommended.

The UNIDO engineers W.G. Fancourt and J.S. Arkwright will travel to the factory together to arrive one day before the ship docks at Huanpu Port. Mr. Fancourt will remain for about two weeks to hand over to Mr. Arkwright who will complete the main part of the mission.

When the containers have been delivered to the factory and all essential preparations made a telephone call will be made to Mr. O'Connell in Vienna to instruct the installation engineers from Anton to travel. This will avoid wasting any of the short time available by the two Anton engineers.

The cases and containers will be opened in the presence of the Chinese, Anton and UNIDO representatives and the quantities of items checked against documents.

If any items are missing or damaged in transit the UNIDO engineer will report the facts to UNDP Beijing with supporting statements from the Chinese and Anton representatives. No action will be taken on missing or damaged items until approval has been given by the Insurance representative.

The machines will be set out on the factory floor and not fixed down until the positions of all are agreed.

When the layout is agreed the Anton engineers will fix down the machines while Chinese labour fixes the air and power conduit and couplings to the factory mains.

The Anton engineers will connect the services to each machine in turn and test it to their own satisfaction. They will then demonstrate the operation and maintenance of the machine to the Chinese and UNIDO representatives and make one window component on the machine.

The machine will be signed for as accepted when it has been seen to work and made an accurate component and the operating and service manuals handed over.

If no raw material is available to make components on the machine then it will be signed for and payment authorised.

Operator training is not the responsibility of Anton. This is part of the mission for the UNIDO engineer to assist factory officials.

The machines are guaranteed by Anton for parts and labour (excluding travel and expenses) for one year. Anton engineers can be hired after this period to repair machines as necessary using the spare parts (where possible) stocked at the factory.

7. SUMMARY OF RECOMMENDATIONS AND ACTION REQUIRED

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- a) Approve the items detailed in Sections 1 and 2 of the Appendix to this report for shipment with the (first) consignment to the factory.
- b) Decide if the items in Section 3 of the Appendix are to be ordered. If so, approve for shipment with the first consignment.
- c) Confirm to Messrs. Anton the suitability of the proposed air main connections and advise them of the conduit sizes.
- d) Check the factory electrical mains neutral and earth conductors and modify them if necessary before the arrival of the equipment.
- e) Consider the alternative to tooling the "old" casement design as set out in Mr. Fancourt's letter to Mr. Sissingh dated 30 January 1984.
- f) Arrange for both UNIDO engineers to arrive at the factory on the day before the ship arrives at Huanpu Port.

Guangzhou Aluminium Windows (formerly The Guangzhou Steel and Aluminium Window and Door Factory), The People's Republic of China, Project DP/CPR/80/045

List of necessary variations to equipment on order from Paul Anton GmbH, Sulzbach, FRG and additional items required.

Section 1 - Items essential for the initial installation of machinery

Item no.	Description	Quantity
1.1	Electric drill suitable for drilling holes in concrete to fix down all equipment supplied by Anton	1
1.2	Extension cable for item 1.1	100 metres
1.3	Electric saw suitable for cutting steel or iron conduit approximately 25 mm bore x 3 mm wall thickness	1
1.4	Extension cable for item 1.3	100 metres
1.5	Meter to test factory power supply	1
1.6	Pneumatic chisel and bits to channel factory floor for air and power conduits	1 set
1.7	Mobile electric air compressor suitable to power item 1.6 and provide sufficient air to test all equipment supplied by Anton, machine by machine	1
1.8	Extension electric cable and air hose for item 1.7	100 metres of each

Item No.	Description	Quantity
1.9	Shut off valve, air hose connector, pipe welding boss and all necessary clips and couplings to provide connecting points for machine air hoses to the 90 mm diameter (approx) factory air mains	1 complete set for each air operated machine supplied by Anton, plus 20 spare sets
1.10	Air hose as necessary to connect the air main to each position where an air operated machine supplied by Anton is to be installed	1 factory set, plus 200 metres spare
1.11	Electrical junction box with isolating switch and 3-phase fuses, with live, neutral and earth connections, including all necessary couplings to 25 mm (approx) conduit and wall fixing screws and plugs	1 complete set for each electric machine supplied by Anton plus 20 spare sets
1.12	Electric power cable as necessary to connect the factory main to each position where an electric machine supplied by Anton is to be installed	1 factory set, plus 200 metres spare
1.13	Lubricating oil for machines supplied by Anton (est. 50 litres/year)	200 litres (1 barrel)
1.14	Hydraulic oil for machines supplied by Anton (est. 150 litres/year)	200 litres (1 barrel)
1.15	Cutting oil for machines supplied by Anton (est. 500 litres/year)	1000 litres (5 barrels)
1.16	Grease for machines supplied by Anton (est. 15 Kg/year)	50 Kg

Item No.	Description	Quantity
1.17	Hand operated grease gun to suit each machine supplied by Anton where greasing is included in the maintenance schedule	1 factory set
1.18	Any other equipment or supplies considered to be necessary by Anton to complete the installation and not included in the purchase orders to Anton or the above list, other than the following which will be supplied by the People's Republic of China: a) Conduit for hoses and cables under floors b) Electric welding equipment c) Work benches d) 5 tonne crane to move machines e) 10 tonne crane to unload containers	To be specified by Anton

Section 2 - Items considered to be essential following the further technical information provided during the meeting at Anton on 23-26 January 1984, including the changes necessary to produce both the "old" and "new" designs of sliding window. Previous item numbers, where quoted, refer to the machine purchasing list dated 4 December 1982.

Item No.	Description or change	Quantity
2.1	Press, as item 22, and tooling to produce square corners on cut-outs by machine 2a for the "old" sliding window	1 set
2.2	Template for machine 2a to produce "old" design cut-outs.	1 set
2.3	Setting blocks for item 16, machine no. 3, to produce 8 mm hole at the sliding window cill angle	1 set
2.4	Punch and die set as item 29 but to suit the "old" design	1 set
2.5	Spare punches for item 2.4	10 sets
2.6	Punch and die set as item 30 but to suit the "old" design	1 set
2.7	CHANGE design of punch and dies, item 31, from 2 holes to 4 holes and include clamping and 2 button operation for operator protection on wide opening tool	4 sets
2.8	Spare punches for item 2.7	20 sets

Item No.	Description or change	Quantity
2.9	DELETE drilling machine, item 42, machine 1, and associated jigs REPLACE by press, as item 22, plus tooling to suit both "old" and "new" designs with buffer holes, all in one tool, including safety feature similar to item 2.7	1 set
2.10	Spare punches for item 2.9	10 sets
2.11	DELETE drilling machine, item 42, machine 2, and associated jigs REPLACE by press, as item 22, plus tooling to suit both "old" and "new" designs, all in one tool	1 set
2.12	Spare punches for item 2.11	10 sets
2.13	DELETE tooling only as specified for drilling machine, item 42, machine 3 REPLACE by countersink cutters	20 pieces
2.14	Press, as item 22, plus tooling to suit both "old" and "new" designs, all in one tool	1 set
2.15	Spare punches for item 2.14	10 sets

Section 3 - Additional items not already ordered but considered necessary by Mr. Wu Zhong Yao, supported by W.G. Fancourt

Item No.	Description	Quantity
3.1	Drilling machine, as item 42, with jigs to produce holes in sliding window corner brackets	2 sets
3.2	Tapping machine to match item 3.1	2 sets
3.3	Glass cutting machine, as item 18	1
3.4	Spare cutters for item 3.3	30 sets
3.5	Spare drill bits 5 mm, 6 mm, 8 mm	1 year's estimated consumption (specify)

Section 4 - Items necessary to produce the "old" design of casements in addition to the "new" design.

The changes in the design of the casement window are quite fundamental. The machines and tooling specified for the "new" design are changed more radically to produce the "old" design of casement.

Messrs. Anton have been given the design details of the "old" casement and are asked to produce a list of recommended equipment and tooling with suggested workshop layout alterations, if necessary, in order to produce the "old" design in addition to the "new" design.

Section 5 - Air Compressor Requirements

The volume of compressed air to be supplied to the factory is 15,000 litres per minute. This volume allows 20% for leakage and 50% for future increases in presently planned consumption.

The pressure of air supplied at the compressor is to be 8 atmospheres minimum and 12 atmospheres maximum. This pressure at the compressor allows for a maximum pressure drop in the distribution pipes of 2 atmospheres to give a minimum working pressure at any machine of 6 atmospheres.

The air must be filtered and dried at the compressor.

The air storage receiver at the compressor needs to be only of small capacity since the air mains contain a large volume.

Two identical machines are required with suitable valves to allow either machine to be switched to supply the total requirement.

Fully automatic controls are to be included to provide unattended start-up of the "idle" machine if the "live" machine fails.

Potential suppliers are to be asked to provide details for the application of more than two smaller machines if this provides a better installation.

