REF. NO.: 91/0424 CERTIFICATE NO.: 14372B

PROPOSAL: Warehouse Industrial units + office

LOCATION: Craig Crescent, Oldalkin Industrial Estate

APPLICANT: Tinie Investments Ltd

	1	2	3	4	5	6	7
CLASS	DWELLINGS/AREA LENGTH/STRUCTURE	RATE	AMT. OF FEE REQUIRED	AMT. LODGED	BALANCE DUE	RED. FEE APPL.	AMT. OF RED. FEE
A	Dwelling (Houses/Flats)	@ £55					
B	Domestic Ext. (Improvement/ Alts.)	@ £30					
C	Building for office or other comm purpose 975.0m²	@ £3.50 per M² or £70	£342.50	342-50	£350	acceptant	
D	Building or other structure for purposes of agriculture	@ £1.50 per M² in excess of 100 M² Min. £70					
E	Petrol Filling Station	@ £200					
F	Dev. of prop. not coming within any of the foregoing classes	£70 or £9 per .1 hect. whichever is the greater					

Column 1 Certified: Signed: J. Grimes Grade: D/T Date: 3/4/91

Column 1 Endorsed: Signed: Grade: Date:

Columns 2,3,4,5,6 & 7 Certified: Signed: Grade: S.O Date: 28/3/91

Columns 2,3,4,5,6 & 7 Endorsed: Signed: Grade: Date:

91A/0424 CERTIFICATE NO: 24693

PROPOSAL: Warehouse Industrial Units + Offices

LOCATION: Crag Crescent, Clondalkin Industrial Estate Clondalkin

APPLICANT: Time Investments Ltd

1	2	3	4	5	6	7
DWELLINGS/AREA LENGTH/STRUCT	RATE	AMT. OF FEE REQ.	AMOUNT LODGED £.	BALANCE DUE	BALANCE DUE	DATE/ RECEIPT NO.
Dwellings	£252					
	£216					
	£50p per M² In excess of 300M² Min. £40					
metres² 975.0M²	£1.75 per M² or £40	£1706.25	£1881.25	£175	overlayment	
x .1 hect.	£625 per .1 hect. or £250					
x .1 hect.	£625 per .1 hect. or £40					
x .1 hect	£625 per .1 hect. or £100.					
	£100					
x metres²	£10 per M² or £40					
x1,000m²	£625 per 1,000m² or £40					
x .1 hect.	£65 per .1 hect. or £40					

Column 1 Certified: Signed: [signature] Grade: DHC Date: 3/4/95.

Column 1 Endorsed: Signed: [signature] Grade: S.O Date: 28/03/95

Columns 2,3,4,5,6 & 7 Certified Signed: Grade: Date:

Columns 2,3,4,5,6 & 7 Endorsed: Signed:

LOCATION GOVERNMENT (PLANNING AND DEVELOPMENT) ACTS, 1963 TO 1982

ASSESSMENT OF FINANCIAL CONTRIBUTION

REG. REF.: 91A/424

CONT. REG.:

SERVICES INVOLVED: WATER/FOUL SEWER/SURFACE WATER

AREA OF SITE:

FLOOR AREA OF PRESENT PROPOSAL: 10495 Ft²

MEASURED BY: J.Y.

CHECKED BY: 3/4/91.

METHOD OF ASSESSMENT:

TOTAL ASSESSMENT

MANAGER'S ORDERED NO: P/ /
DATED

ENTERED IN CONTRIBUTIONS REGISTER:

Contributions and Secondary Agreement

DEVELOPMENT CONTROL ASSISTANT GRADE

QN 2065 XU1(A)

SS + CMO.

Register Reference : 91A/0424 Date : 9th April 1991

Development : Industrial units with two storey offices on previously approved site development

LOCATION : Crag Cresent, Clondalkin Industrial Estate

Applicant : Time Investments Ltd.

App. Type : PERMISSION/BUILDING BYE-LAW APPROVAL

Planning Officer : M.GALVIN

Date Recd. : 25th March 1991

Attached is a copy of the application for the above development .Your report would be appreciated within the next 28 days.

Yours faithfully,

Date received in Sanitary Services 18 APR 1991

DUBLIN CORPORATION
SAN SERVICES

DUBLIN CORPORATION
SANITARY SERVICES
PRINCIPAL OFFICER
10 MAY 1991
Returned

FOUL SEWER

Available Any effluent other than domestic effluent to be subject to the provisions of the Water Pollution Act.

PLANNING DEPT.
DEVELOPMENT CONTROL SECT
Date 14:4:91
Time

SURFACE WATER

Available

Surface water run-off is subject to the provisions of the Water Pollution Act.

8/5/91.

SENIOR ENGINEER,
SANITARY SERVICES DEPARTMENT,
46/49 UPPER O'CONNELL STREET,
DUBLIN 1

8/5/91

GK.

Register Reference : 91A/0424 Date : 26th March 1991

ENDORSED _____ DATE _____

WATER SUPPLY Water available Provided Text:

(1) Proposed W/M terminates in a hydrant outside No. 7

(2) An additional hydrant required outside unit No. 10

(3) Each Unit to have its storage and its own metered supply

ENDORSED _____ DATE _____

(4) Connection to the existing system Swabbing and chlorination by DCC personnel at applicants expense.

J. Lofts 18/4/91.

3/5/91

18/4/91

M.G

Register Reference : 91A/0424

Date : 9th April 1991

Development : Industrial units with two storey offices on previously approved site development

LOCATION : Crag Cresent, Clondalkin Industrial Estate

Applicant : Time Investments Ltd.

App. Type : PERMISSION/BUILDING BYE-LAW APPROVAL

Planning officer : M.GALVIN

Date Recd. : 25th March 1991

Attached is a copy of the application for the above development .Your report would be appreciated within the next 28 days.

Yours faithfully,

PRINCIPAL OFFICER

The proposal is acceptable subject to compliance with regulations made thereunder - Office Premises Act 1958 and Factories Act 1989.

Compliance with Safety, Health and Welfare at Work Act 1989.

Compliance with Safety in Industry Act 1955/89

Specific water permission being sought if it is proposed to carry on a food business

in the units.

John O'Reilly

SUPER. ENVIRON. HEALTH OFFICER,
33 GARDINER PLACE,
DUBLIN 1.

15/5/91

PLANNING DEPT.
DEVELOPMENT CONTROL SECT
Date 22.05.91
Time 11.10

(KR)

DUBLIN COUNTY COUNCIL

REG. REF: 91A/425.

LOCATION: Strand Street, Malahide.

APPLICANT: F. McGowan & Co. Ltd.

PROPOSAL: Showrooms and offices.

DATE LODGED: 25.3.91.

This proposal is located on a road, substandard in width alignment and junctions and has a substandard footpath along frontage to site (i.e there is no footpath at the corner of development adjacent to laneway).

The proposal is undesirable as it has no provision for off-street car parking and will result in an intensification of traffic and on-street parking at this location.

However, if further consideration is being given to his application the applicant should be requested for additional information showing how he could set back the building line so as to provide for a standard footpath along frontage to site and at the corner of development adjacent to laneway, to the requirements of the Roads Department.

In addition, the applicant should be requested to show how he could provide for 14 no. off-street parking spaces in accordance with Development Plan Standards to facilitate the proposal.

JF/EMcC
9.5.91

SIGNED: _____

DATE: 9th May 1991

ENDORSED: _____

DATE: 10/5/91

TOTAL P.03

F/2191/91

COMHAIRLE CHONTAE ÁTHA CLIATH

Record of Executive Business and Manager's Orders

Register Reference : 91A/0424 Date Received : 25th March 1991

Correspondence Name and Address : Maurice Drennan MRIAI
: National Management Centre
Sandyford,
Dublin 16.

Development : Industrial units with two storey offices on previously approved site development

CN 2065 XM
6530

Location : Crag Cresent, Clondalkin Industrial Estate

Applicant : Time Investments Ltd.

App. Type : Permission

Zoning :

CONTRIBUTION:
Standard Standard
Roads Nil - Paid in full
S Sers
Open Space
Other
SECURITY:
Bond / C.I.F.: Security
Cash: Lodged

MG/BB

Report of Dublin Planning officer dated 14th May, 1991.

This is an application for planning permission for industrial units with two stoery offices on previously approved site development at Crag Crescent, Clondalkin Industrial Estate, Dublin 22 for Time Investments Ltd.

Reg. Ref. No. 89A/46 refers to a grant of permission to the construction of two self contained ~~office~~ industrial units with ancillary offices, site development works and access road at this site. The applicants were Ivanter Developments Ltd.

Reg. Ref. No. 90A/277 refers to a grant of permission for the construction of 6 no. ~~office~~ industrial units in one block with internal office accommodation at first floor (mezzanine) level to each unit on part of this site for Time Investments Ltd. The current application provides for the construction of 4 no. additional units of total floor area 1075 sq. metres. External finishes proposed are similar to those at the existing units and comprise gray metal cladding with blue aluminium windows.

Lodged plans identify 37 no. off street car parking spaces on site to the front side and rear of the proposed development. A total of 32 no. spaces would be required to serve this development according to Development Plan standards.

Roads Department report (received ~~24~~ 29.4.91) states no objection subject to conditions regarding completion of roads and services. Report also requests contribution towards road improvement in the area. A similar contribution was requeste d by Roads under Reg. Ref. No. 90A/277. However the planning officers report on that application noted that no road levies were being applied in this area - none imposed under Reg. Ref. No. 88A/46.
Sanitary Services Report ~~not received~~ not yet received

COMHAIRLE CHONTAE ÁTHA CLIATH

Record of Executive Business and Manager's Orders

Reg.Ref: 91A/0424

Page No: 0002

Location: Crag Cresent, Clondalkin Industrial Estate

This site was inspected on 9th May, 1991. The previously approved 6 no. units have been completed and appear to be occupied. The access road has been completed including footpaths and verges on its southern side. The site of the proposed development is currently overgrown and in a generally derelict condition. No footpaths etc. have been erected at this part of the site. The carriageway only at Crag Crescent has been constructed. However this has not been taken in charge.

Lodged plans identify an additional area to the north of the subject site and along Crag Crescent as in the control of the applicant.

I recommend that a decision to GRANT PERMISSION be made under the Local Government (Planning and Development) Acts, 1963-1990 subject to the following (/) conditions:-

C O N D I T I O N S / R E A S O N S

01 The development to be carried out in its entirety in accordance with the plans, particulars and specifications lodged with the application save as may be required by the other conditions attached hereto.
REASON:To ensure that the development shall be in accordance with the permission and that effective control be maintained.

02 That before development commences, approval under the Building Bye- Laws be obtained and all conditions of that approval be observed in the development.
REASON:In order to comply with the Sanitary Services Acts, 1878-1964.

03 That the requirements of the Supervising Environmental Health Officer be ascertained and strictly adhered to in the development.
REASON: In the interest of health.

04 That the requirements of the Chief Fire Officer be ascertained and strictly adhered to in the development.
REASON: In the interest of safety and the avoidance of fire hazard.

05 That the water supply and drainage arrangements be in accordance with the requirements of the Sanitary Services Department. In this regard, details of the quality and quantity of industrial effluent (if any) shall be lodged. Run-off from spillage areas shall be subject to the provisions of the Water Pollution Act. In relation to water supply;- (a)

COMHAIRLE CHONTAE ÁTHA CLIATH

Record of Executive Business and Manager's Orders

Reg.Ref: 91A/0424

Page No: 0003

Location: Crag Cresent, Clondalkin Industrial Estate

all connections, swabbing and chlorination to be carried out by Dublin County Council at the developer's expense; (b) separate individual metered supplies required for the proposed units; (c) 24 hour storage required for proposed units. REASON: In order to comply with the requirements of the Sanitary Services Department.
(D) the Proposed watermain is to terminate in a hydrant outside unit No 7 an additional hydrant is to be provided outside unit No 7

06 That off-street car parking and parking for trucks be provided in accordance with the Development Plan Standards.

06 REASON: In the interest of the proper planning and development of the area.

07 That details of a standardised boundary treatment and landscaping scheme be ~~approved~~ agreed in writing by the Planning Authority and work thereon completed prior to the occupation of the buildings.
REASON: In the interest of visual amenity.

~~08~~ That no development under any permission granted pursuant to this decision be commenced until security for the provision and satisfactory completion of services, including maintenance, until taken in charge by the Local Authority for Roads, Open Spaces, Car Parks, Sewers, Watermains and Drains, has been given by:-
A. Lodgement with the Council of an approved Insurance Company Bond in the sum of £ _____ which shall be renewed by the developer from time to time as required during the course of the development and kept in force by him until such time as the Roads, Open Spaces, Car Parks, Sewers, Watermains and Drains are taken in Charge by the Council. OR./..
B. Lodgement with the Council of a Cash Sum of £ _____ to be applied by the Council at its absolute discretion if such services are not duly provided to its satisfaction on the provision and completion of such services to standard specifications. Or./...
Lodgement with the Planning Authority of a letter of guarantee by any body approved by the Planning Authority for the purpose in respect of the proposed development in accordance with the guarantee scheme agreed with the Planning Authority and such lodgement in any case has been acknowledged in writing by the Council.

8 ~~09~~ That specific details of the use of each unit be submitted to the Planning Authority for written agreement prior to occupation of the units.

9 ~~09~~ REASON: In the interest of the proper planning and development of the area.

9 ~~10~~ That no industrial effluent be permitted without prior licence from the Sanitary Services Department of Dublin County Council.

COMHAIRLE CHONTAE ÁTHA CLIATH

Record of Executive Business and Manager's Orders

Reg.Ref: 91A/0424

Page No: 0004

Location: Crag Cresent, Clondalkin Industrial Estate

9 ~~10~~ REASON: In the interest of the proper planning and development of the area.

10 ~~11~~ That details of treatment of the eastern boundary of the site shall be submitted to and agreed with Planning Authority prior to the commencement of development.

10 ~~11~~ REASON: In the interest of the proper planning and development of the area.

11 ~~12~~ That the applicant shall complete the construction of a footpath with grass verge and public lighting within the 2.6 metre wide reservation along the entire western boundary of the site at Crag Crescent. All works, including kerbing, shall be in accordance with Council standards. All work to be completed prior to the occupation of the proposed units. Trees to be planted at 3 metre wide intervals within the road side grass margin (alternating Cherry Blossom and Copper Beech).

11 REASON: To ensure a satisfactory standard of development.

12 ~~13~~ That the applicant shall consult with E.S.B. with regard to the relocation and undergrounding of any existing power line on site, if necessary.

12 ~~13~~ REASON: In the interest of the proper planning and development of the area.

13 ~~14~~ That the applicants shall construct the section of Crag Crescent extending along the entire west boundary of the site and from the site to the junction with the main distributor road (Crag Avenue) to Council standards for taking in charge. Such works to include carriageway construction, the provision of kerbing, grass verge, footpath, public lighting and saplings at 3 metre intervals along the grass verge.

13 ~~14~~ REASON: In the interest of the proper planning and development of the area.

14 ~~15~~ That no advertising sign or structure be erected except those which are exempted development, without prior approval of Planning Authority.

14 REASON: In the interest of the proper planning and development of the area.

15 ~~16~~ That the roadside grass verge along proposed service road be planted with mature deciduous trees at a rate of one tree per industrial unit during planting season after commencement of development.

COMHAIRLE CHONTAE ÁTHA CLIATH

Record of Executive Business and Manager's Orders

Reg.Ref: 91A/0424

Page No: 0005

Location: Crag Cresent, Clondalkin Industrial Estate

15 ~~16~~ REASON: In the interest of the proper planning and development of the area.

Endorsed:-.....
for Principal Officer

.....
for Dublin Planning Officer

Order: A decision pursuant to Section 26(1) of the Local Government (Planning and Development) Acts, 1963-1990 to GRANT PERMISSION for the above proposal subject to the (/S) conditions set out above is hereby made.

Dated : 21 May 1991 .....
ASSISTANT CITY AND COUNTY MANAGER

to whom the appropriate powers have been delegated by order of the Dublin City and County Manager dated 26th April, 1991.

DUBLIN COUNTY COUNCIL

REG. REF: 91A/424.

LOCATION: Crag Crescent, Clondalkin Ind.

APPLICANT: Time Investments Ltd.

PROPOSAL: Ind. units with two storey offices.

DATE LODGED: 25.3.91.

No Roads objection subject to:-

1. No development to commence on site until road and footpaths have been constructed on site frontage to County Council Standards.

2. Applicant to make a contribution of £6,000 towards the improvement of the surrounding substandard road network.

Note: See also previous Roads Report of 4.4.90 in respect of 90A/277).

PLANNING DEPT.
DEVELOPMENT CONTROL SECT
Date 23/04/91
Time 9:30 A.M.

TR/BMcC
25.4.91.

SIGNED: Joseph Rogers

DATE: 25/4/91

ENDORSED: T. Burke

DATE: 29/4/91

Dublin County Council Comhairle Chontae Atha Cliath **Planning Department**

Building Control Department,
Liffey House,
Tara Street,
Dublin 1.
Telephone:773066

Bloc 2, Ionad Bheatha na hEireann,
Bloc 2, Irish Life Centre,
Sraid na Mainistreach Iacht,
Lower Abbey Street,
Baile Atha Cliath 1.
Dublin 1.
Telephone (01) 724755
Fax (01) 724896

Register Reference : 91A/0424/C1 Date : 31st August 1992

LOCAL GOVERNMENT (PLANNING AND DEVELOPMENT) ACTS, 1963 TO 1991

Dear Sir/Madam,

DEVELOPMENT : Compliance with condition no. 11

LOCATION : Crag Crescent, Clondalkin

APPLICANT : Time Investments Ltd.

APP. TYPE : Compliance with Conditions

With reference to the above, I acknowledge receipt of your submission to comply with conditions received on 24th August 1992.

Yours faithfully,

.....

for PRINCIPAL OFFICER

Time Investments Ltd.,
Baybush,
Straffan,
Co. Kildare

TME INVESTMENTS LIMITED

BAYBUSH,
STRAFFAN,
CO. KILDARE.

Tel. (01) 288384
Fax. (01) 273396

21st August, 1992

91A/0424 ?

condition 11.

Senior Administrative Officer,
Planning Department,
Dublin County Council,
Block 2,
Irish Life Centre,
Lower Abbey Street,
Dublin, 1.

RE: Industrial Development at Crag Crescent, Clondalkin Industrial Estate.

Dear Sir,

With reference to your letter of 28th July, we would be pleased to receive your specification and requirements for Public Lighting at the above.

We enclose copy of site block plan for your information.

We will be pleased to complete the work in accordance with your instructions as soon as possible.

Yours faithfully,

S Burke

SEAMUS BURKE

DUBLIN COUNTY COUNCIL
Planning Dept. Registry Section
APPLICATION RECEIVED
25 AUG 1992
REG No.

DUBLIN COUNTY COUNCIL
PLANNING DEPT
24 AUG 1992
RECEIVED

DUBLIN COUNTY COUNCIL

Tel. 724755 (ext. 262/264)

PLANNING DEPARTMENT.
BLOCK 2,
IRISH LIFE CENTRE,
LR. ABBEY STREET.
DUBLIN 1.

Notification of Decision to Grant Permission/[redacted]

Local Government (Planning and Development) Acts, 1963–1983

To: Maurice Drennan,
National Management Centre,
Sandyford,
Dublin 16.

Applicant: Time Investments Ltd.

Decision Order Number and Date: P/2191/91 23.05.91

Register Reference No.: 91A/0424

Planning Control No.:

Application Received on: 25.03.91

In pursuance of its functions under the above-mentioned Acts, the Dublin County Council, being the Planning Authority for the County Health District of Dublin, did by Order dated as above make a decision to grant Permission/[redacted] for:-

industrial units with two-storey offices on previously approved site development at Carg Crescent, Clondalkin Industrial Estate.

SUBJECT TO THE FOLLOWING CONDITIONS

CONDITIONS	REASONS FOR CONDITIONS
1. The development to be carried out in its entirety in accordance with the plans, particulars and specifications lodged with the application, save as may be required by the other conditions attached hereto.	1. To ensure that the development shall be in accordance with the permission and that effective control be maintained.
2. That before development commences, approval under the Building Bye-Laws be obtained, and all conditions of that approval be observed in the development.	2. In order to comply with the Sanitary Services Acts, 1878-1964.
3. That the requirements of the Supervising Environmental Health Officer be ascertained and strictly adhered to in the development.	3. In the interest of health.
4. That the requirements of the Chief Fire Officer be ascertained and strictly adhered to in the development.	4. In the interest of safety and the avoidance of fire hazard.

Over .....

Signed on behalf of the Dublin County Council: Rose Kenny
For Principal Officer

Date: 23 May 1991

IMPORTANT: Turn overleaf for further information

CONDITIONS	REASONS FOR CONDITIONS
5. That the water supply and drainage arrangements be in accordance with the requirements of the Sanitary Services Department. In this regard, details of the quality and quantity of industrial effluent (if any) shall be lodged. Run-off from spillage areas shall be subject to the provisions of the Water Pollution Act. In relation to water supply;-(a) all connections, swabbing and chlorination to be carried out by Dublin County Council at the developer's expense; (b) separate individual metered supplies required for the proposed units; (c) 24 hour storage required for proposed units; (d) the proposed watermain is to terminate in a hydrant outside Unit No. 7. An additional hydrant is to be provided outside Unit No. 7.	5. In order to comply with the requirements of the Sanitary Services Department.
6. That off-street car parking and parking for trucks be provided in accordance with the Development Plan Standards.	6. In the interest of the proper planning and development of the area.
7. That details of a standardised boundary treatment and landscaping scheme be agreed in writing by the Planning Authority and work thereon completed prior to the occupation of the buildings.	7. In the interest of visual amenity.
8. That specific details of the use of each unit be submitted to the Planning Authority for written agreement prior to occupation of the units.	8. In the interest of the proper planning and development of the area.
9. That no industrial effluent be permitted without prior licence from the Sanitary Services Department of Dublin County Council.	9. In the interest of the proper planning and development of the area.
10. That details of treatment of the eastern boundary of the site shall be submitted to and agreed with the Planning Authority prior to the commencement of development.	10. In the interest of the proper planning and development of the area.

Over .....

NOTE:

If there is no appeal to An Bord Pleanala against this decision PERMISSION/APPROVAL will be granted by the Council as soon as may be after the expiration of the period for the taking of such appeal. If every appeal made in accordance with the Acts has been withdrawn, the Council will grant the PERMISSION/APPROVAL after the withdrawal.

An appeal against the decision may be made to An Bord Pleanala. The applicant may appeal within one month from the date of receipt by him of this notification. ANY OTHER PERSON may appeal within twenty-one days beginning on the date of the decision.

An appeal shall be in writing and shall state the subject matter and grounds of the appeal. It should be addressed to:—

An Bord Pleanala, Blocks 6 and 7, Irish Life Centre, Lower Abbey Street, Dublin 1.

(1) An appeal lodged by an applicant or his agent with An Bord Pleanala will be invalid unless accompanied by a fee of £36 (Thirty-six Pounds). (2) A party to an appeal making a request to An Bord Pleanala for an Oral Hearing of an appeal must, *in addition* to (1) above, pay to An Bord Pleanala a fee of £36 (Thirty-six Pounds). (3) A person who is not a party to an appeal must pay a fee of £10 (Ten Pounds) to An Bord Pleanala when making submissions or observations to An Bord Pleanala in relation to an appeal.

Approval of the Council under Building Bye-Laws must be obtained and the terms of the approval must be complied with in the carrying out of the work before any development which may be permitted is commenced.

FUTURE PRINT LTD.

DUBLIN COUNTY COUNCIL

Tel. 724755 (ext. 262/264)

PLANNING DEPARTMENT,
BLOCK 2,
IRISH LIFE CENTRE,
LR. ABBEY STREET,
DUBLIN 1.

Notification of Decision to Grant Permission/[redacted]

Local Government (Planning and Development) Acts, 1963-1983

To Maurice Drennan,
National Management Centre,
Sandyford,
Dublin 16.

Decision Order Number and Date P/2191/91 23.05.91

Register Reference No. 91A/0424

Planning Control No.

Application Received on 25.03.91

Applicant Time Investments Ltd.

In pursuance of its functions under the above-mentioned Acts, the Dublin County Council, being the Planning Authority for the County Health District of Dublin, did by Order dated as above make a decision to grant Permission/[redacted] for:-

industrial units with two-storey offices on previously approved site development at Carg Crescent, Clondalkin Industrial Estate.

SUBJECT TO THE FOLLOWING CONDITIONS

CONDITIONS	REASONS FOR CONDITIONS
11. That the applicant shall complete the construction of a footpath with grass verge and public lighting within the 2.6 metre wide reservation along the entire western boundary of the site at Crag Crescent. All works, including kerbing, shall be in accordance with Council standards. All work to be completed prior to the occupation of the proposed units. Trees to be planted at 3 metre wide intervals within the road side grass margin (alternatively Cherry Blossom and Copper Beech).	11. To ensure a satisfactory standard of development.
12. That the applicant shall consult with E.S.B. with regard to the relocation and undergrounding of any existing power line on site, if necessary.	12. In the interest of the proper planning and development of the area.

Over .....

Signed on behalf of the Dublin County Council Rose Kenny
For Principal Officer

Date 23 May 1991

IMPORTANT: Turn overleaf for further information

CONDITIONS	REASONS FOR CONDITIONS
13. That the applicants shall construct the section of Crag Crescent extending along the entire west boundary of the site and from the site to the junction with the main distributor road (Crag Avenue) to Council standards for taking in charge. Such works to include carriageway construction, the provision of kerbing, grass verge, footpath, public lighting and saplings at 3 metre intervals along the grass verge.	13. In the interest of the proper planning and development of the area.
14. That no advertising sign or structure be erected, except those which are exempted development, without prior approval of the Planning Authority.	14. In the interest of the proper planning and development of the area.
15. That the roadside grass verge along proposed service road be planted with mature deciduous trees at a rate of one tree per industrial unit during planting season after commencement of development.	15. In the interest of the proper planning and development of the area.

NOTE:

If there is no appeal to An Bord Pleanala against this decision PERMISSION/APPROVAL will be granted by the Council as soon as may be after the expiration of the period for the taking of such appeal. If every appeal made in accordance with the Acts has been withdrawn, the Council will grant the PERMISSION/APPROVAL after the withdrawal.

An appeal against the decision may be made to An Bord Pleanala. The applicant may appeal within one month from the date of receipt by him of this notification. ANY OTHER PERSON may appeal within twenty-one days beginning on the date of the decision.

An appeal shall be in writing and shall state the subject matter and grounds of the appeal. It should be addressed to:—

An Bord Pleanala, Blocks 6 and 7, Irish Life Centre, Lower Abbey Street, Dublin 1.

(1) An appeal lodged by an applicant or his agent with An Bord Pleanala will be invalid unless accompanied by a fee of £36 (Thirty-six Pounds). (2) A party to an appeal making a request to An Bord Pleanala for an Oral Hearing of an appeal must, *in addition* to (1) above, pay to An Bord Pleanala a fee of £36 (Thirty-six Pounds). (3) A person who is not a party to an appeal must pay a fee of £10 (Ten Pounds) to An Bord Pleanala when making submissions or observations to An Bord Pleanala in relation to an appeal.

Approval of the Council under Building Bye-Laws must be obtained and the terms of the approval must be complied with in the carrying out of the work before any development which may be permitted is commenced.

FUTURE PRINT LTD.

Dublin County Council Comhairle Chontae Atha Cliath **Planning Department**

Building Control Department,
Liffey House,
Tara Street,
Dublin 1.
Telephone:773066

Bloc 2, Ionad Bheatha na hEireann,
Block 2, Irish Life Centre,
Sraid na Mainistreach Iacht,
Lower Abbey Street,
Baile Atha Cliath 1.
Dublin 1.
Telephone. (01)724755
Fax. (01)724896

Register Reference : 91A/0424

Date : 26th March 1991

LOCAL GOVERNMENT (PLANNING AND DEVELOPMENT) ACTS, 1963 TO 1990

Dear Sir/Madam,

DEVELOPMENT : Industrial units with two storey offices on previously approved site development

LOCATION : Crag Cresent, Clondalkin Industrial Estate

APPLICANT : Time Investments Ltd.

APP. TYPE : PERMISSION/BUILDING BYE-LAW APPROVAL

With reference to above, I acknowledge receipt of your application received on 25th March 1991.

Yours faithfully,

.....

PRINCIPAL OFFICER

Maurice Drennan MRIAI
National Management Centre
Sandyford,
Dublin 16.

Dublin County Council
Comhairle Chontae Atha Cliath

Planning Application Form/
Bye - Law Application Form

PLEASE READ INSTRUCTIONS AT BACK BEFORE COMPLETING FORM. ALL QUESTIONS MUST BE ANSWERED.

1. Application for Permission [✓] Outline Permission [ ] Approval [ ] Place ✓ in appropriate box.
Approval should be sought only where an outline permission was previously granted. Outline permission may not be sought for the retention of structures or continuances of uses.

2. Postal address of site or building (If none, give description sufficient to identify) Crag Crescent, Clondalkin Industrial Estate, Clondalkin, Dublin 22.

3. Name of applicant (Principal not Agent) Time Investments Ltd

Address Baybush, Straffan, Co Kildare. Tel. No 6288384

4. Name and address of person or firm responsible for preparation of drawings Maurice Drennan MRIAI, National Management Centre, Sandyford, Dublin 16 Tel. No 956911

5. Name and address to which notifications should be sent to 4 above

£1851.50 25/3 N 34349

6. Brief description of proposed development Single storey Warehouse/Industrial Units with two-storey offices.

7. Method of drainage Mains sewer & S.W. 8. Source of Water Supply Mains supply

9. In the case of any building or buildings to be retained on site, please state:-
(a) Present use of each floor or use when last used. N/A
(b) Proposed use of each floor

£1362.50 N 34646 APPLICATION PROSS 21/3/91

10 Does the proposal involve demolition, partial demolition or change of use of any habitable house or part thereof? No

DUBLIN 22 permission and B.B.L. approval sought for industrial units with two storey offices on previously approved site development at Crag Crescent, Clondalkin Industrial Estate, for Time Investments Limited

11.(a) Area of Site 7296 Sq. m.
(b) Floor area of proposed development 1075 Sq. m.
(c) Floor area of buildings proposed to be retained within site 2511 Sq. m.

12. State applicant's legal interest or estate in site (i.e. freehold, leasehold, etc.) Freehold

13. Are you now applying also for an approval under the Building Bye Laws?
Yes [ ] No [ ] Place ✓ in appropriate box.

14. Please state the extent to which the Draft Building Regulations have been taken in account in your proposal:
Insofar as they apply.

15. List of documents enclosed with application.
4 copies of drawings & Specification / 2 calculations
4 copies advertisement in Irish Press dated 28/2/91
cheque and covering letter & Engineer Certificate.

16. Gross floor space of proposed development (See back) 1075 Sq. m.

No of dwellings proposed (if any) N/A Class(es) of Development

Fee Payable £ 5643.75 Basis of Calculation 1075m² x £5.25 = £5643.75
If a reduced fee is tendered details of previous relevant payment should be given

Signature of Applicant (or his Agent) M Drennan Date 25th March 91

Application Type P/BBL
Register Reference 91A/0424
Amount Received £
Receipt No
Date

FOR OFFICE USE ONLY
2.16.4

RECEIVED
25 MAR 1991
REG

LOCAL GOVERNMENT (PLANNING & DEVELOPMENT) REGULATIONS 1977 to 1984.

Outline of requirements for applications for permission or Approval under the Local Government (Planning & Development) A[illegible] 1963 to 1983. The Planning Acts and Regulations made thereunder may be purchased from the Government Publications Sales Office, Sun Alliance House, Molesworth Street, Dublin 2.

1. Name and Address of applicant.

2. Particulars of the interest held in the land or structure, i.e. whether freehold, leasehold, etc.

3. The page of a newspaper, circulating in the area in which the land or structure is situate, containing the required statutory notice. The newspaper advertisement should state after the heading Co. Dublin.

   (a) The address of the structure or the location of the land.
   (b) The nature and extent of the development proposed. If retention of development is involved, the notice should be worded accordingly. Any demolition of habitable accommodation should be indicated.
   (c) The name of the applicant.

   NB. Applications must be received within 2 weeks from date of publication of the notice.

4. Four (4) sets of drawings to a stated scale must be submitted. Each set to include a layout or block plan, proposed and existing services to be shown on this drawing, location map, and drawings of relevant floor plans, elevations, sections, details of type and location of septic tank (if applicable) and such other particulars as are necessary to identify the land and to describe the works or structure to which the application relates (new work to be coloured or otherwise distinguished from any retained structures). Buildings, roads, boundaries and other features bounding the structure or other land to which the application relates shall be shown on site plans or layout plans. The location map should be of scale not less than 1: 2500 and should indicate the north point. The site of the proposed development must be outlined in red. Plans and drawings should indicate the name and address of the person by whom they were prepared. Any adjoining lands in which the applicant has an interest must be outlined in blue.

5. In the case of a proposed change of use of any structure or land, requirements in addition to 1, 2, & 3 are:
   (a) a statement of the existing use and the proposed use, or, where appropriate, the former use and the use proposed.

   (b) (i) Four (4) sets of the drawings to a stated scale must be submitted. Each set to consist of a plan or location map (marked or coloured in red so as to identify the structure or land to which the application relates) to a scale of not less than 1:2500 and to indicate the North point. Any adjoining lands in which the application has an interest must be outlined in blue.

   (ii) A layout and a survey plan of each floor of any structure to which the application relates.

   (c) Plans and drawings should indicate the name and address of the person by whom they were prepared.

6. Applications should be addressed to: Dublin County Council, Planning Department, Irish Life Centre, Lr. Abbey Street, Dublin 1. Tel. 724755.

SEPTIC TANK DRAINAGE: Where drainage by means of a septic tank is proposed, before a planning application is considered, the applicant may be required to arrange for a trial hole to be inspected and declared suitable for the satisfactory percolation of septic tank effluent. The trial hole to be dug seven feet deep at or about the site of the septic tank. Septic tanks are to be in accordance with I.I.R.S. S.R. 6:75.

INDUSTRIAL DEVELOPMENT:
The proposed use of an industrial premises should, where possible, be stated together with the estimated number of employees, (male and female). Details of trade effluents, if any, should be submitted.

Applicants to comply in full with the requirements of the Local Government (Water Pollution) Act,1977 in particular the licencing provisions of Sections 4 and 16.

PLANNING APPLICATIONS

CLASS NO.	DESCRIPTION	FEE
1.	Provision of dwelling — House/Flat.	£32.00 each
2.	Domestic extensions/other improvements.	£16.00
3.	Provision of agricultural buildings (See Regs.)	£40.00 minimum
4.	Other buildings (i.e. offices, commercial, etc.)	£1.75 per sq. metre (Min. £40.00)
5.	Use of land (Mining, deposit or waste)	£25.00 per 0.1 ha (Min £250.00)
6.	Use of land (Camping, parking, storage)	£25.00 per 0.1 ha (Min. £40.00)
7.	Provision of plant/machinery/tank or other structure for storage purposes.	£25.00 per 0.1 ha (Min. £100.00)
8.	Petrol Filling Station.	£100.00
9.	Advertising Structures.	£10.00 per m^2 (min £40.00)
10.	Electricity transmission lines.	£25.00 per 1,000m (Min. £40.00)
11.	Any other development.	£5.00 per 0.1 ha (Min. £40.00)

BUILDING BYE-LAW APPLICATIONS

CLASS NO.	DESCRIPTION	FEE
A	Dwelling (House/Flat)	£55.00 each
B	Domestic Extension (improvement/alteration)	£30.00 each
C	Building — Office/ Commercial Purposes	£3.50 per m^2 (min. £70.00)
D	Agricultural Buildings/Structures	£1.00 per m^2 in excess of 300 sq. metres (min. - £70.00) (Max. - £300.00)
E	Petrol Filling Station	£200.00
F	Development or Proposals not coming within any of the foregoing classes.	£9.00 per 0.1 ha (£70.00 min.)
		Min. Fee £30.00
		Max. Fee £20,000

Cheques etc. should be made payable to: Dublin County Council.

Gross Floor space is to be taken as the total floor space on each floor measured from the inside of the external walls.

For full details of Fees and Exemptions see Local Government (Planning and Development) (Fees) Regulations 1984.

RECEIPT CODE

COMHAIRLE CHONTAE ÁTHA CLIATH

DUBLIN COUNTY COUNCIL
46/49 UPPER O'CONNELL STREET,
DUBLIN 1.

Issue of this receipt is not an acknowledgement that the fee tendered is the prescribed application fee.

N° 34349

PAID BY —

CASH /

CHEQUE

M.O.

B.L.

I.T.

£182.75

Received this 25th day of March 1991

from Tiac Investments Ltd

Craig Cabinet

Woodalton Ind. Est.

the sum of Five Thousand eight hundred + Eighty 00 Pounds

Twenty five Pence being 10% for

plan application at Craig Cabinet

Woodalton

Market Deans

S. CAREY
Principal Officer

Cashier

MAURICE DRENNAN *MRIAI*
Architect-Project Manager
National Management Centre Sandyford Road Dublin 16 Telephone: 956911 Telex: 30325 Fax: 955147

25th March 1991

Dublin County Council
Planning Department
Irish Life Centre
Lower Abbey Street
Dublin 1

Re: Industrial Units With Two-Storey Offices on Previously Approved Site - Ref Reg No 88A/46 - BBL No 614/88 at Crag Crescent, Clondalkin Industrial Estate, Dublin 22.

Dear Sirs,

I enclose the following documentation in connection with the above application.

4 sets of Architectural Drgs - Location/Block Plan Drg No 9001/12
" " " " " - Ground & 1st Floor Layout Plan Drg No 9001/13
" " " " " - Elevations Drg No 9001/14
" " " " " - Sections Drg No 9001/15
2 sets of Structural Engineers' Calculations and Certificates.
4 copies of Scope Specification.
4 copies of advertisement in the Irish Press dated March 21st, 1991.
4 copies of the completed Application Form.
Cheque for Planning Charges in the sum of £5643.75.

The present proposal consists of the construction of Units 7 to 10 inclusive, the first six units and site works, roads, etc have already been constructed (Ref.Planning Reg. No. 88A/46 - BBL 614/88 and also Planning Permission Reg. No. 90A/277 and BBL/1280/90). It is proposed that the remaining four units will be constructed to match in all respects the present six units to give an overall unified appearance.

Yours faithfully,

M Drennan

Maurice Drennan

DUBLIN COUNTY COUNCIL
... Section
... RECEIVED
25 MAR 1991
Reg/0404

McCabe, Delaney & Associates

Consulting Engineers

Dr. R.P. McCabe, Ph.D., M.A.I., M.A., B.Sc.(Lond), M.I.C.E.
J.D. Kirwan Browne, M.A., B.A.I., M.I.E.I.

Mr. Maurice Drennan, MRIAI.,
Architect Project Manager,
National Management Centre,
Sandyford Road,
Dublin 16.

42 Casimir Road,
Harold's Cross,
Dublin 6W
Telephone: 974589/974035
Fax No: 974589

Your Ref:

Our Ref: DB/MG/102

Date: 14th March, 1991

Industrial Units at Clondalkin
for Time Investments Ltd.,
Industrial Estate, Clondalkin,
Co. Dublin.

Dear Sir,

We hereby certify that the structure for the above development has been designed in accordance with all relevant current standards, and codes of practice, and that during construction periodic inspections will be made by this office.

SIGNED : J.D. Kirwan Browne

J.D. Kirwan Browne, MA, BAI, MIEI.,
For McCabe, Delaney & Associates.

SCOPE SPECIFICATION

FOR

WAREHOUSE/INDUSTRIAL UNITS

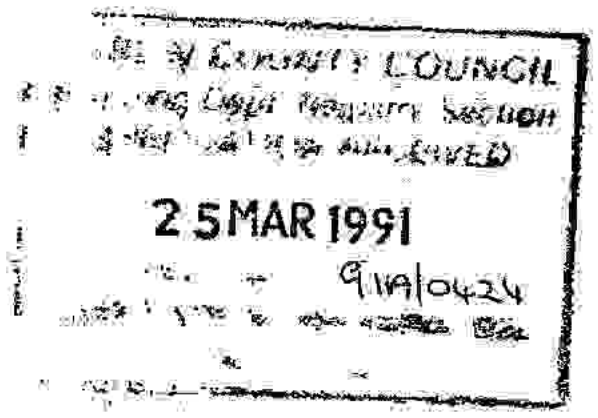
AT

THE ENTERPRISE CENTRE

CRAG CRESCENT

CLONDALKIN INDUSTRIAL ESTATE

DUBLIN 22



FOR

TIME INVESTMENTS LTD

MAURICE DRENNAN MRIAI
ARCHITECT-PROJECT MANAGER
NATIONAL MANAGEMENT CENTRE
SANDYFORD ROAD
DUBLIN 16

TEL: 956911 FAX: 955147

MARCH 1991

INTRODUCTION : The present proposal consists of the construction of Units 7 to 10 inclusive the first six units and site works, road, etc have already been constructed Ref. Plannin Reg. No. 88A/46 - BBL 614/88 also Planning Permission Reg. No. 90A/277 and BBL/1280/90. It is proposed that the remaining units will be constructed to match in all aspects the present six units to give an overall unified appearance.

This Specification should be read in conjunction with Architects' drawings 9001/12 to 15 inclusive.

DRAINAGE

A. GENERAL : All work shall be carried out in accordance with the requirements of Dublin County Council and the following British Standard Specifications:

C.P. 301 : 1950	Building Drainage.
C.P. 303 : 1952	Surface Water and Subsoil Drainage.
C.P. 2005 : 1968	Sewerage.

B. MATERIALS :

1. **Pipes :** Concrete pipes shall comply with requirements of BS 556 : 1966 and IS6.

Asbestos cement pipes shall comply with requirements of BS 3656 : 1963.

uPVC pipes shall comply with requirements of Provisional Specification issued by Department of Local Government.

Clayware pipes and fittings shall comply with requirement of IS6 or BS65, 540 and 539.

2. Rubber Rings : Rubber rings to pipe joints shall comply with requirements of BS 2494: Part 2.

2. Manhole Components: Precast concrete manholes, floors, walls and lids shall comply with requirements of BS 556 : 1966.

Step irons shall comply with requirements of BS 1247.

Manhole covers and frames shall comply with requirements of BSG497 : Grade A in all but size which shall be minimum of 600mm. x 600mm rectangular or 550mm. diameter.

4. Gullies : Gullies shall comply with requirements of BS 556 for concrete and BS 497 Grade E for gratings.

5. Concrete : Concrete shall comply with requirements of CP110 : 1972.

6. Aggregates : Aggregates shall comply with requirements of IS5.

6. Cement : Cement shall be NPC and shall comply with IS1 : 1963.

All cement shall be fresh when delivered.

8. Rendering : Rendering to manhole walls shall be 1 : 3 cement sand dry volume with approved waterproofing agent.

9. Channels and Benching for Manholes : Channels shall consist of preformed channels or pipes vut to form channels. At manholes where there is a change in pipe size between the main pipe entering and that leaving the manhole, the connecting channel shall consist of an approved proprietary taper. Where a suitable taper is not available the channel shall be formed in in-situ concrete finished with 1 : 2 cement sand mortar.

Benching shall rise vertically from the top edge of the channel to a height not less than that of the soffit of the outlet, be sloped upwards thence to the wall at a gradient of 1 in 6 and finished in a cement mortar.

In the case of branch drains, the benching shall be so shaped as to guide the flow of sewage in the desired direction.

Alternatively, precast base units, incorporating channels and benching, may be used subject to approval.

C. WORKMANSHIP :

10. Levels : Before laying new drains, the Contractor shall check levels of existing drains, sewers and manholes with invert levels shown on drawings.

Any discrepancies noted shall be referred to Engineer for decision before work commences.

11. Alignment and Setting Out : Not less than three sight rails shall be erected in each section of trench by the Contractor. They shall be of suitable materials and provided with accurate and easy means of adjustment. They shall be securely fixed in positions indicated by the Engineer and the Contractor will be responsible for their maintenance.

12. Excavation : Trench lines and excavation for manholes shall be excavated in straight and even lines and to such depths as will permit the sewers to be laid on the concrete bed with the invert levels as shown for each section. A clear space of 600mm. shall be left between the excavated material and the side of the trench.

13. Laying in Trenches : Pipes shall be laid in accordance with the manufacturer's recommendations and to even gradients. Care shall be taken in filling in around pipes that the pipes and joints are not damaged.

14. Bedding, Benching & Covering :

Beds under 100 and 150 mm. diameter pipes shall be a minimum of 100mm thick and extend a minimum of 150mm. from each side of the pipe.

The pipe is to be wrapped in one layer of 300 guage polythene sheet and encased in 115 mm. concrete for 100mm. and 150mm. pipes; and not less than 150mm. of concrete for 225 and larger diameter pipes.

Gullies shall be set on a 150mm. thick concrete bed 400mm. square; junctions on a 150mm. thick concrete bed 600mm. swuare.

Gullies shall be benched up to a height of 100mm. and junction to the height of the adjoining pipes.

All pipes running under buildings or roadways shall be surrounded in concrete 150mm. thick.

15. Manholes :

A 50mm. thick blinding layer of concrete shall be placed under floors of all manholes which shall comprise 150mm. of concrete 30N20.

Manhole roofs shall be concrete 30N20 reinforced as shown on the drawings with ope for cover and frame.

Manhole frames shall be bedded and haunched in 1 : 3 cement mortar.

Channels and benching shall be as specified earlier.

With Engineer's approval, the Contractor may use precast concrete manhole rings and covers.

16. Backfilling

Trenches : When pipe, drains and manholes have been tested and approved, the trenches shall be refilled.

Selected materials from which all large stones have been removed by screening shall be replaced over and around the pipe to a depth of 300mm. and thoroughly consolidated. The remainder of the filling shall then be placed in layers not exceeding 300mm. in depth and each layer shall be thoroughly rammed.

Material that is too wet or otherwise unsuitable shall not be used for backfilling and shall be replaced with pea gravel, hardcore or pit run gravel approved by the Engineer's.

17. Cleaning of Sewers and Drains : At time of completion, the Contractor shall ensure, to the satisfaction of Engineer and Dublin County Council, that all sewers and drains are clean and free from obstructions.

D. TESTING : All sewers and drains shall be tested to the requirements of Dublin Co. Council using water or air.

All manholes shall be tested for infiltration of ground water.

WATERMAINS

A. GENERAL : The watermains shall be laid according to the drawings and looped as shown and shall comply with requirements of Dublin County Council.

B. MATERIALS : Watermains shall be Wavin unplasticized PVC pipes to IS 123 and shall be Class C.

All valves, hydrants, covers, surface boxes and other appurtenances shall be to the requirements of Dublin Co. Council.

Service pipes shall be minimum of 12mm. diameter and shall be Polyethylene 425 type complying with IS 134 or others approved by the Engineer.

C. PIPE LAYING : Pipes shall be laid on 50mm. bed of fine sand and shall have a minimum cover of 900mm. Hydrants shall be located such that no house is more than 50m. from a hydrant and depth of hydrant outlet should not exceed 200mm. below finished ground level.

D. TESTING AND COMMISSIONING : After pipes are laid and jointed and before covering they shall be tested to a pressure of 13.5 bar in presence of Co. Council's representative.

On completion the system shall be flushed out before connection to Local Authority Supply.

PAVING

A. EXCAVATION : Site Excavation shall be uniformly graded at formation level to lines and levels shown on Drawings or as otherwise directed by the Engineers.

B. COMPACTING SUBGRADE : After excavation, the sub-grade shall be thoroughly compacted and any depressions which develop during compaction shall be filled with select hardcore to Engineers satisfaction. The greatest care shall be taken at all times to keep surface of sub-grade truly graded and even.

C. SUB-BASE : Sub-base material shall comprise natural gravel or crushed rock to Engineers approval with following grading :

Sieve size BS 410	Precentage by weight passing
75 mm	100
37.5mm	85-100
10 mm	40-70
5 mm	25-45
600 mm	8-22
75 mm	0-10

All material used shall be frost resistant.

Sub-base shall be throoughly compacted to Clause 802 of MOT Specification and blinded with quarry dust to Engineers approval.

D. CONCRETE ROADS :

The sub-base shall comply with Clause C above. concrete paving shall be reinforced concrete, having a finished compacted thickness as shown on the Drawings and with transverse and longitudinal joints as specified. Cement shall be ordinary Portland Cement and shall comply with IS1.

Concrete shall be 30N20 and shall comply with CP110.

Cross falls shall be 1:50 from crown to channel.

Steel Reinforcement shall be to BS 4449 and RS 4482.

Joints shall be constructed by approved methods and have vertical faces and shall be sealed not earlier than 6 days after concrete has been laid with an approved sealing compound.

E. LEAN MIX SUB BASES :

Lean mix concrete shall be laid and compacted by paving machine or other method approved by the Engineer in layers not less than 100mm and not greater than 200mm in depth after compaction.

Lean mix concrete shall be compacted by vibrating roller applying a static load greater than 1.8 kN/100mm width of roll.

F. FLEXIBLE PAVING :

Flexible paving shall comprise basecourse of 50mm compacted thickness of 20mm Wearing Course Macadam to BS 1621 rolled with power roller overlaid with 20mm thickness of 10mm Wearing Course Macadam to BS 1621 rolled with power roller.

Total thickness of macadam shall be 70mm.

Macadam shall be uniform in texture with neat straight joints all to approval of Engineer. Macadam shall be laid hot at recommended temperature and any material whose temperature falls below the recommended level below laying, shall be removed from site at no expense to Employer.

G. FOOTPATHS :

Footpaths shall be laid to crossfall of 1 in 36 and where adjacent to carriageway, the fal.shall be towards the carriageway.

Construction shall be single course in-situ concrete 30N20 100mm thick on 75 mm. compacted hardcore.

Joints shall be formed at max. spacing of 5m. and each joint shall include a double thickness of bituminous roofing felt complying with IS 36 (Type IF) for full depth of joint.

After completion of tamping, footpath surface shall receive brush finish from stiff brush with 100mm wide trowelled edge, all to approval of Engineer.

H. KERBS :

Precast concrete kerbs shall be 250mm x 150mm complying with IS 46. They shall be laid on a 100mm thick x 300mm wide concrete bed and haunch with joints neatly filled and pointed in 1:3 cement mortar.

A. FOUNDATIONS :

All work to foundations shall comply with the requirements of the following British Standards :

CP : 2004 : 1972. Code of Practice for Foundations.

BS : 6031 : 1981 Code of Practice for Earth Works.

CP : 101 : 1972. Foundations and Sub-Structures for non industrial buildings of not more than 4 storeys.

CP : 102 : 1973. Code of Practice for Protection of Buildings against water from the ground.

B. APPROVAL OF FOUNDATIONS :

All excavations for foundations shall be made to the depths, levels, widths and dimensions shown on the Drawings. The levels on the Drawings shall be adjusted on site by the Engineer to suit local variations in levels of ground and bearing strata. In all cases, bearing strata exposed in levels shall be approved before concreting is carried out. This approval shall be by the Engineer and also by the Building Control Department of the Local Authority. It will be the responsibility of the Contractor to ensure that the Local Authority inspects the foundation cuttings.

C. KEEPING EXCAVATIONS DRY :

It is essential that the bottoms of all excavations be kept dry and that excavated trenches be blinded with concrete as soon as possible

The Contractor shall be responsible and shall provide all necessary equipment and labour for keeping all excavations dry and free from water during excavation and subsequent operations.

D. BACKFILLING : No backfilling shall be carried out until foundations and rising walls have been approved by the Engineer.

Backfilling shall consist of broken stone hardcore to the satisfaction of the Engineer.

E. WALLS : Rising walls shall be 2.5 solid blockwork. External walls shall be 215 solid blockwork 900 high over floor level as shown on Architects Drawings. Division walls shall be 215 thick A5 block solid block walls with band beams as shown on the Drawings. Walls shall be constructed generally in accordance with Bye-Laws (3)

F. MATERIALS : Blockwork shall comply with BS 5628.

G. MORTAR : Sand shall comply with BS 1200 : 1985. Hydrated lime shall comply with IS 8 : 1973. Normal Portland cement shall comply with IS 1963. Ready mixed sand/lime mortar shall comply with BS 4721 : 1971. Water shall be clean and free from harmful matter and appropriable quality.

H. DAMP PROOF COURSE :

Bitumen damp proof course with fibre base in lead shall comply with BS 743 Type F.

Polythene damp proof courses shall comply with IS 57 : 1972.

I. MORTAR TYPE :

Mortar types shall be CSL 3 which shall comprise cement NPC (lime and sand in the proportions of 1 : 1 : 6).

J. WORKMANSHIP :

Workmanship in blockwork and brickwork generally shall comply in all respects with the appropriate recommendations of the following British Standards.

CP : 121 : Part 1 : 1973.

BS : 5628:

A. REINFORCEED CONCRETE :

1. Concrete : Quality of materials and standard of workmanship for reinforced concrete shall comply with the relevant clauses of BS Code of Practice 8110 : 1985.

2. Supervision : The Contractor shall employ a competent person fully experienced in reinforced concrete construction, whose primary duty it will be to supervise all stages of preparation and placing of the concrete.

3. Reinforcement : Steel reinforcement shall comply with BS 449 : 1969 in the case of hot rolled mild steel bars, and BS 449 : 1969 in the case of hot rolled deformed high yield steel bars.

Mesh fabric shall comply with BS 4482.

4. Concrete Grade: The concrete grade shall be 30N20.

A. GROUND FLOOR SLAB : The ground floor slab shall have a power floated finish. The Contractor shall take great care to ensure that the floor surface is finished to a very high standard, and he shall be responsible for providing temporary rain covering protection as necessary to eliminate pitting by rain or other damage to surface.

The Contractor shall take every care to ensure adequate protection of the dpm from damage.

1. Sub-Base : Sub-base shall be sand blinded hardcore. The Contractor shall ensure that the hardcore is adequately compacted and blinded before placing the concrete slab.

2. Tolerances : The maximum deviation from specified floor levels shall be 5mm. In any area variation in level over 3m. shall not exceed ± 2mm.

A. PRECAST PRESTRESSED CONCRETE :

The structural concrete frame shall be manufactured by Concast Precast Ltd.,

1. Precast concrete units shall be in accordance with BS 8110 : 1985 in all respects.

2. Materials : All materials used in precasting shall comply with the Reinforced Concrete section of this Specification.

3. Erection : Precast units shall be erected with care and should be lifted into position as directed by the Supplier.

Any units damaged during erection shall be replaced at the Contractors expense.

A. ROOF : The roof construction shall be insulated metal deck as described on the Architects Drawings.

1. Roof Drainage : The roofs shall be drained as shown on the Drawings in compliance with Bye-Law 82.

2. Drains : All drains shall be constructed in accordance with the requirements of Bye-Laws, 85,86,87,88 & 89 and to standards required by Dublin County Council.

Before backfilling drains they shall be inspected and passed by the Local Authority.

INDUSTRIAL UNITS

AT

CLONDALKIN INDUSTRIAL ESTATE,

CLONDALKIN, CO. DUBLIN.

STRUCTURAL CALCULATIONS

FOR

TIME INVESTMENTS LTD.,

UNITS 7,8,9 & 10.

MARCH, 1991.

42, CASIMIR ROAD,
HAROLD's CROSS,
DUBLIN 6W.

Design based on Drawings by Maurice Drennan, MRIAI., and Concast Precast Ltd.,

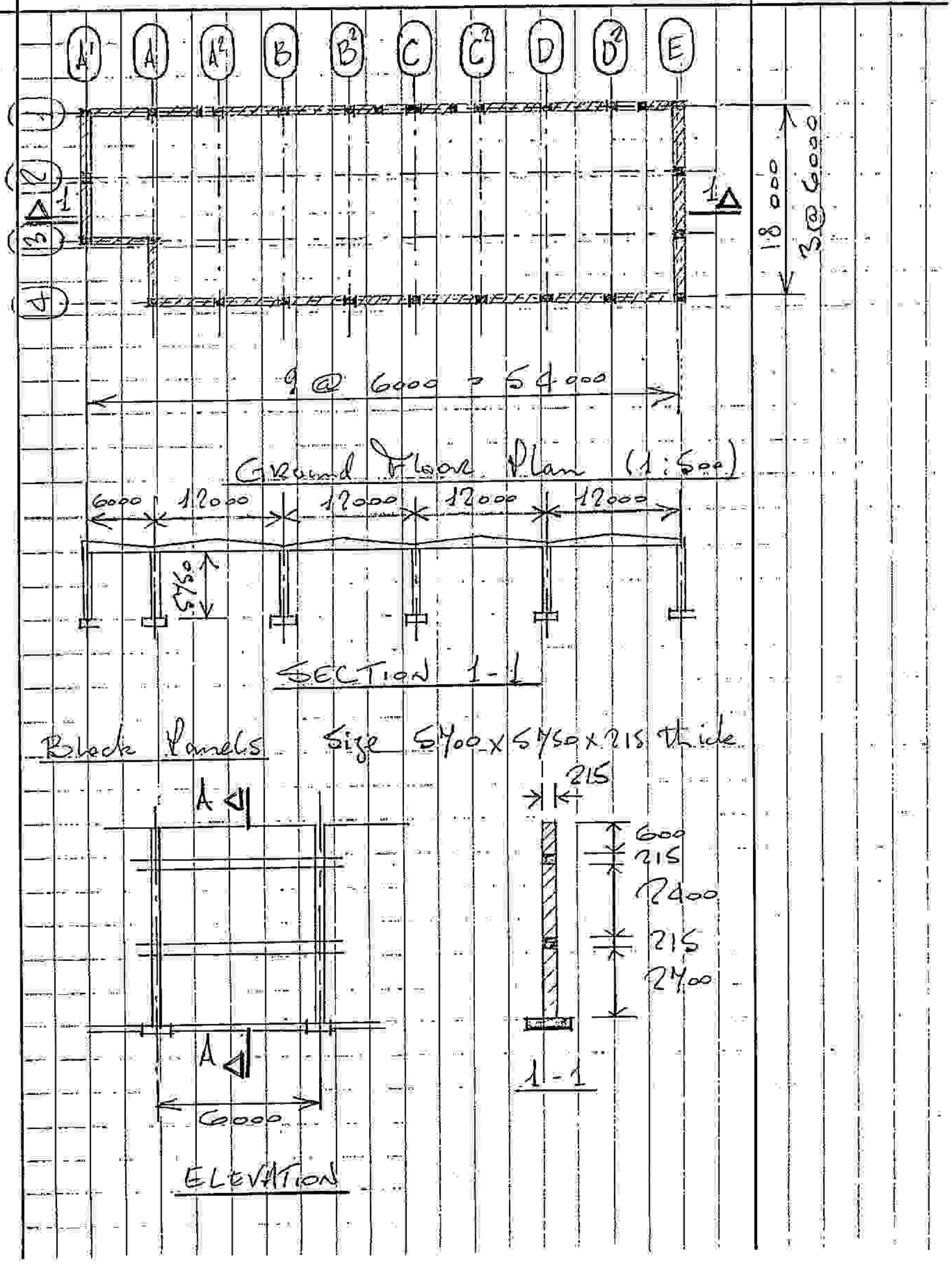
These Calculations to supplement those of Concast Precast Ltd.,

Trial holes were opened on site and showed consistent ground conditions of very stiff boulder clay with a bearing capacity in excess of 300Kn/m^2.

McCabe, Delaney & Associates
Consulting Engineers
42 Casimir Road, Harold's Cross,
Dublin 6W
Telephone (01) 974589/974035
Fax 974589

Contract: Industrial Este. Clondalkin			Job ref.
Part of structure: G.A.			Calc. sheet No. 1
Drawing ref.	Calculations by: S.F.	Checked by	Date: 13/3/91

Members ref. | CALCULATIONS | OUTPUT



McCabe, Delaney & Associates
Consulting Engineers
42 Casimir Road, Harold's Cross,
Dublin 6W
Telephone (01) 974589/974035
Fax 974589

Contract	Job ref.
Industrial Este, Clondalkin	
Part of structure: Block Panels	Calc. sheet No. 2
Drawing ref. / Calculations by: S.P / Checked by	Date 13/3/91

Members ref.	CALCULATIONS	OUTPUT

$W_k = 0.68\ kN/m^2$ See P3 Concrete calcs.

Upper Panel

IS325

Panel E — 2.4m — $f_{k\perp 1} = 0.25\ N/mm^2$

5.4m — $f_{k\perp 1} = 0.5\ N/mm^2$

$\Rightarrow \mu = 0.5$

$h/L = 2400/5400 = 0.42 \Rightarrow \alpha = .022$

$m = \alpha W_k \gamma_f L^2$

$= .022 \times 0.68 \times 1.2 \times 5.4^2$

$= 0.58\ kNm/m$ height

Lower Panel 2400×5400

$h/L = \frac{2400}{5400} = 0.44 \Rightarrow \alpha = .024$

$m = .024 \times 0.68 \times 1.2 \times 5.4^2$

$= 0.62\ kNm/m$ height

$M = f_{k\perp 1} Z/\gamma_m = 0.5 \times 4.70/3.5$

$= 1.0\ kNm/m$ height

Panels Satisfactory.

Band Beam Span = 5.4 m SS at ends

UDL from wind $= (1.4 \times 0.68) \times 2.4/65$

$= 2.63\ kN/m$ run

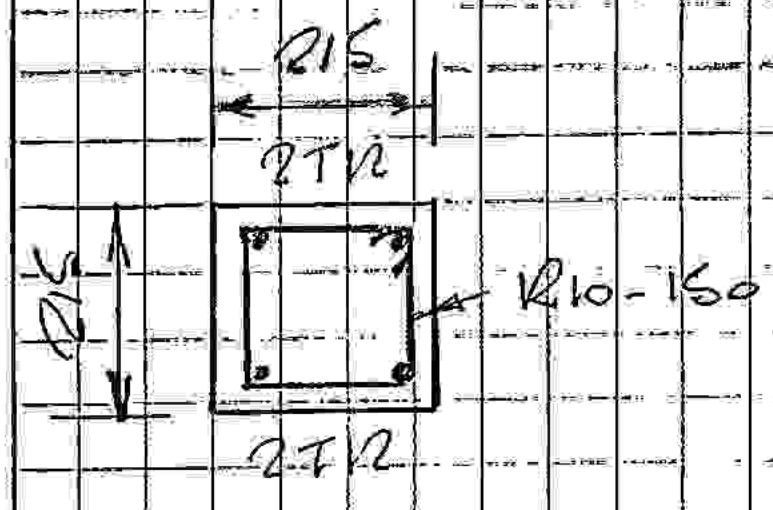
$M = WL^2/8 = 2.63 \times 5.4^2/8$

$= 10.7\ kNm$

McCabe, Delaney & Associates
Consulting Engineers
42 Casimir Road, Harold's Cross,
Dublin 6W
Telephone (01) 974589/974035
Fax 974589

Contract	Job ref.
Industrial Este. Clondalkin	
Part of structure: Block Panels	Calc. sheet No.: 3
Drawing ref.	Calculations by: RT.
Checked by	Date: 18/3/91

Members ref.	CALCULATIONS	OUTPUT



lever arm = 150

Typical Section through Band Beam

$M_R = 2 \times 113\,mm^2 \times 150 \times 400\,N/mm^2 / 10^6$
$= 13.56\,kNm \quad (> 10.4)$

Band beams satisfactory.

Main Foundations for 300 x 300 cols.

Worst case is col. shown on p.8 Concast calcs.

$G_k = 118.5\,kN$
$Q_k = 66.4\,kN$
Self = 12.3 "
197.6 kN

assume bearing 200 kN/m²

$\text{Area Reqd.} = \frac{197.6 + 10\%}{200} = 1.09\,m^2$

Try 1200 x 1200 x 1000 base

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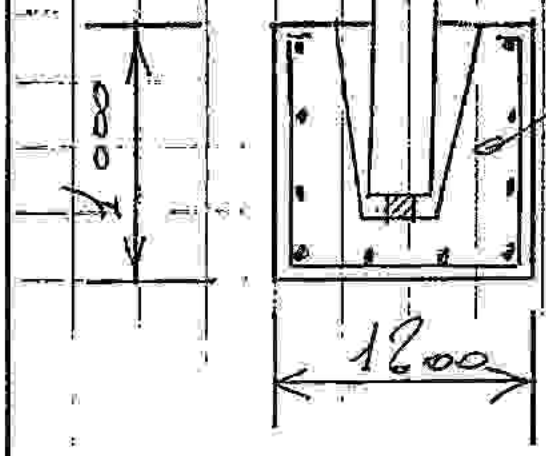
Fax 974589

Contract	Job ref.
Industrial Este. Clondalkin	
Part of structure: Footings.	Calc. sheet No. 4
Drawing ref. / Calculations by: E.J. / Checked by / Date: 6/2/91	

Members ref.	CALCULATIONS	OUTPUT

Punching Shear



Check 1.4 Gk + 1.6 Qk on interior col.

Σ Vert. loads = 1.4 (118.9 + 34.6) + 1.6 x 66.9
= 321.1 kN

Check for Punching Shear
assume min. v_c = 0.36 N/mm²

Check Shear Perimeter at d from column face, d = 300

Size of Perimeter = 300 + 300 + 300 = 900 sq.

Shear Resistance = 2 v_c x Perim. x d
= 2 x 0.36 x d x 900 x 300 / 1000
= 444.6 kN
(> 321.1 kN)

∴ Punching Shear Satisfactory

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Fax 974589

Contract	Job ref.
Industrial Este. Clondalkin	
Part of structure: Foundations	Calc. sheet No. 5
Drawing ref.	Calculations by: E.T. / Checked by	Date: 13/3/91

Members ref. | CALCULATIONS | OUTPUT

Edge Pads assume 1.2² x 1m deep

Wind load on cols = 0.68 x 6 = 4.08 kN/m height

Columns designed as propped cantilevers

ht. of col = 5.7m

M base = WL²/8 = 16.6 kNm Service

load comb.

1.2 Wk &

1.2 Gk + 1.2 Qk

base shear = 5/8 (4.08 x 1.2 x 5.7)

= 17.44 kN ult.

For dead + live - take 50% of internal column.

Vert. load = 0.5 x 1.2 (118.9 + 34.6 + 66.4)

= 131.94 kN

131.94 kN

17.44 kN

19.9

1m

ult. moment

= 1.2 (16.6) = 19.9 kNm

x = (19.88 + 17.44 x 1) / 131.94

= 0.28m (> b/6)

ult. P max. = 2/3 (131.94) / 1000 (500 - 280) = 399.8 kN/m²

= 399.8 / 1.2 = 333.2 kN/m² service

≈ 3 T/ft²

Check load Comb 1.4 Wk and Gk.

1.4 Wk = 17.44 x 1.4/1.2 = 20.35 kN

M = 9.88 x 1.4/1.2 = 23.2 kNm

Vert. load = 0.5 (118.9 + 34.6) = 76.75 kN

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Fax 974589

Contract	Job ref.
Industrial Este. Clondalkin	
Part of structure: Founds.	Calc. sheet No. 6
Drawing ref. / Calculations by: L.F. / Checked by / Date: 13/3/91	

Members ref.	CALCULATIONS	OUTPUT

$e = (20.35 \times 1 + 23.2)/76.5$

$= 0.57\,m \quad (< b/2)$

$\therefore$ Pad won't overturn.

but too close for Prestige factor of safety.

$\therefore$ Try 1500 x 1500 x 1000 Pads

Vert. load $= 0.5\left(18.9 + 34.6 \times \frac{1.5^2}{1.2^2}\right)$

$= 86.5\,kN$

$e = (20.35 \times 1 + 23.2)/86.5$

$= 0.5\,m \quad (< b/2)$

$\Rightarrow$ Pad won't overturn.

$P_{max.} = \dfrac{3/3\,(86.5)}{1000\,(1.5/2 - .5)} = 231\,kN/m^2$

$\therefore$ Use 1500 x 1500 x 1000 Deep Pads throughout where

ENG. A/ PHASE II.

ADD UNITS AT CLUBHOUSE

Concrete Beams with

Revision A/ PHASE II.

08/11/88

01

Issue 26-7-90

Revision # Pergola.

Issue

SECTION A-A

TWO ½ SPAN 16 BEAMS

4 x 4 NO 6° 16 BEAMS

SOFFIT BEAMS

+1080

5400

6000

6000

6000

12000

12000

12000

12000

A

B

C

D

E

ROOF PLAN

09/10/1990

Issue

PRECAST

INDUSTRIAL UNITS AT CONDITIONAL.

P.C. Roof Beam & Gutter

89/11/98/01-1 UNIT

89/11/85

-02

Fck = 1.5 N

DESIGN OF P.C. ROOF BEAM.

Roof	Live Load	0.75 kN/m²
Roof	Finishes	0.05 "
Roof	Sheeting	0.15 "
Roof	Services	0.20 "
		1.15 kN/m².

DEPTH OF PRECAST BEAM AT APEX 1080 mm

BAY CENTRES 6.0 m.

For Beam + Gutter Design
See Computation Print out.

WIND LOADS AT LONDONDERRY
CALCULATION DESIGN
55 to 58 Pl HTA

BASIC WIND SPEED 44 m/s.
Building Class C Exposure 3.

Height = 5.4 + 10.8 + .375 = 16.885

Factor S_2 = 0.69. Design Speed = 31.74 m/s.

Design Pressure = .613 kN/m²

$\frac{h}{b}$ = $\frac{16.885}{18.0}$ = 0.38.

$\frac{L}{b}$ = $\frac{60}{18}$ = 3.33

Shape and C_p = 0.7
S_3 C_p = 1.1

Design Load = 0.7 × .613 = 0.43 kN/m² (small)
1.1 × .613 = 0.68 kN/m² (side)

CP110_DESIGN _ ROOF BEAM

CLONDALKIN IND ESTATE

4

LIVE LOAD .75 KN/SQ.M.
ROOF SHEETING .15 KN/SQ.M.
PURLIN WEIGHT .05 KN/SQ.M.
SERVICES .2 KN/SQ.M.

CONCRETE CUBE STRENGTH AT WORKING = 50 n/sq.mm.

CONCRETE CUBE STRENGTH AT TRANSFER = 35 n/sq.mm.

FOLLOWING TABLE SHOWS STRESS ANALYSIS FOR SERVICEABILITY LIMIT STATE
C6 BEAM OUTPUT DATA BEAM NO 0 SPAN = 12 BAY LENGTH= 6

X	SELF WT MOM	TOTAL MOM	SELF WT STRESS	TOTAL STRESS	TRANS TOP	TRANS BTM	WORK TOP	WORK BTM
.6	14.9661	38.5641	1.13977	2.93693	-2.89868	8.60839	-.390755	5.09556
1.2	28.3568	73.0688	1.71225	4.41266	-2.04677	7.13086	1.31463	2.87467
1.8	40.1721	103.514	1.97026	5.0769	-1.53548	6.11752	2.18818	1.58703
2.4	50.412	129.9	2.04803	5.27729	-1.23867	5.4609	2.57564	.86053
3	59.0766	152.227	2.12754	5.48217	-.531132	5.72018	3.29143	.989346
3.6	66.1658	170.491	2.06905	5.33147	-.44167	5.48853	3.26263	.830062
4.2	71.6796	184.782	1.97016	5.07664	-.418383	5.18131	3.10848	.81617
4.8	75.6181	194.85	1.84558	4.75562	-.440284	5.01536	2.87207	.897792
5.4	77.9811	200.939	1.78475	4.59273	-.49344	4.89492	2.58143	1.04539
6	78.7688	202.969	1.55388	4.00399	-.568362	4.88894	2.25526	1.23898

SECTION PROPERTIES SPAN = 12

X	IXX	YT=78	DEPTH	WIDTH	AREA	ECCENTRICITY
.6	3.3645E+09	1.31308E+07	512.46	300	153738	205.23
1.2	4.76564E+09	1.65612E+07	575.52	300	172656	237.76
1.8	6.51087E+09	2.03892E+07	638.58	300	191574	269.29
2.4	8.63541E+09	2.46149E+07	701.64	300	210492	300.82
3	1.06169E+10	2.77676E+07	764.7	300	169164	332.35
3.6	1.32354E+10	3.19788E+07	827.76	300	176731	363.88
4.2	1.62052E+10	3.63827E+07	890.82	300	184299	395.41
4.8	1.95415E+10	4.09726E+07	953.88	300	191866	426.94
5.4	2.32592E+10	4.57436E+07	1016.94	300	199433	458.47
6	2.73735E+10	5.06917E+07	1080	300	207000	490

NUMBER OF 12.5DIA STRANDS = 4 APS*FPU=265 KN
FORCE IN STRANDS AT TRANSFER = 238.9 KN
FORCE IN STRANDS AT WORKING = 361.654 KN

ALLOWABLE STRESSES
AT TRANSFER TENSION = -2.6 n/sq.mm.
COMPRESSION= +17.5n/sq.mm.

VOLUME OF CONCRETE (M**3)= 2.2304

AT WORKING TENSION = -3.2 n/sq.mm.
COMPRESSION= +16.7n/sq.mm.

ULTIMATE LOADING CONDITION

X	ULT B.M.	MU	ULT. SHEAR	VCO
0.00	0.00	0.00	100.12	230.68
0.60	57.07	230.07	90.11	253.85
1.20	100.13	274.28	80.10	276.76
1.80	153.18	318.19	70.08	299.45
2.40	192.23	346.70	60.07	321.99
3.00	225.27	370.19	50.06	147.84
3.60	252.30	406.40	40.05	150.31
4.20	273.32	442.60	30.04	160.64
4.80	288.34	478.81	20.02	178.86
5.40	297.35	515.02	10.01	188.97
6.00	300.36	551.23	0.00	198.99

LIVE LOAD = .75 Kn/M**2 ROOF DEAD LOAD = .4 Kn/M**2

POINT LOAD ON BEAM 0 KN DISTANCE FROM LEFT HAND SIDE 0 METRES

BEAM SELF WEIGHT = 4.37605 Kn/M

LIVE LOAD TO COLUMN = 27 Kn, DEAD LOAD TO COLUMN = 48.6563 Kn

**********GUTTER DESIGN**********

GUTTER LIVE LOAD	0.7KN/M
CENTRAL POINT LOAD	2.0 KN
GUTTER SELF WEIGHT	2.8 KN/M
LIVE LOAD TO COLUMN	3.1 KN
DEAD LOAD TO COLUMN	9.4 KN
APPLIED MOMENT	27.18 KN-M
APPLIED SHEAR	16.72 KN
AREA OF TENSION STEEL REQD	360 sq.mm.
AREA OF STEEL PROVIDED	628 sq.mm.
MOMENT OF RESISTANCE	35.1068 KN-M
TABLE 10 MOD. FACTOR	1.58
DEPTH REQUIRED = 6 /(20* 1.58)	
REQUIRED DEPTH	189.873 mm
DEPTH PROVIDED	250 mm
DEFLEXION CHECK VERIFIED	

C6 FRAME COLUMN DESIGN CLONDALKIN IND ESTATE

COLUMN HEIGHT ABOVE BASE = 5.7 M ROOF DEPTH = 1.33 M
WIND LOADING .43 KN/SQ.M. BAY LENGTH 6 M
APPLIED LOADS LIVE = 33.2 KN DEAD = 59.45 KN

COLUMN SIZE 300 X 300

Exterior Columns.. 6

P=0 Q=0 FACTORS 1.4GK+1.6QK+0.0WK

HEIGHT ABOVE BASE	MOMENT KN-M	LOAD KN	AST sq.mm.	ASC sq.mm.
5.13	5.04	138.07	450.00	0.00
4.56	8.10	139.80	450.00	0.00
3.99	11.24	141.52	450.00	0.00
3.42	14.46	143.24	450.00	0.00
2.85	17.75	144.97	450.00	0.00
2.28	21.11	146.69	450.00	0.00
1.71	24.55	148.42	450.00	0.00
1.14	28.06	150.14	450.00	0.00
0.57	31.65	151.86	450.00	0.00
-0.00	35.31	153.59	450.00	0.00

P= 3.4314 KN Q= 1.27802 KN
LOAD FACTORS 1.2 GK+ 1.2 QK+ 1.2 WK

HEIGHT ABOVE BASE	MOMENT KN-M	LOAD KN	AST sq.mm.	ASC sq.mm.
5.13	1.11	112.66	450.00	0.00
4.56	6.61	114.13	450.00	0.00
3.99	9.18	115.61	450.00	0.00
3.42	11.81	117.09	450.00	0.00
2.85	14.51	118.57	450.00	0.00
2.28	17.27	120.04	450.00	0.00
1.71	22.78	121.52	450.00	0.00
1.14	30.32	123.00	450.00	0.00
0.57	38.92	124.48	450.00	0.00
-0.00	48.60	125.95	450.00	0.00

P= 3.4314 KN Q= 1.27802 KN
LOAD FACTORS 1 GK+ 0 QK+ 1.4 WK

HEIGHT ABOVE BASE	MOMENT KN-M	LOAD KN	AST sq.mm.	ASC sq.mm.
5.13	2.21	60.58	450.00	0.00
4.56	3.57	61.91	450.00	0.00
3.99	4.99	63.14	450.00	0.00
3.42	6.47	64.37	450.00	0.00
2.85	8.00	65.61	450.00	0.00
2.28	9.58	66.84	450.00	0.00
1.71	15.41	68.07	450.00	0.00
1.14	22.51	69.30	450.00	0.00
0.57	30.85	70.53	450.00	0.00
-0.00	40.41	71.76	450.00	0.00

REVERSAL OF STRESSES WIND IN OPPOSITE DIRECTION

HEIGHT ABOVE BASE	MOMENT KN-M	LOAD KN	AST sq.mm.	ASC sq.mm.
5.13	5.04	138.87	450.00	0.00
4.56	8.10	139.80	450.00	0.00
3.99	11.24	141.52	450.00	0.00
3.42	14.46	143.24	450.00	0.00
2.85	17.75	144.97	450.00	0.00
2.28	21.11	146.69	450.00	0.00
1.71	24.55	148.42	450.00	0.00
1.14	28.06	150.14	450.00	0.00
0.57	31.65	151.86	450.00	0.00
-0.00	35.31	153.59	450.00	0.00

REVERSAL OF STRESSES WIND IN OPPOSITE DIRECTION

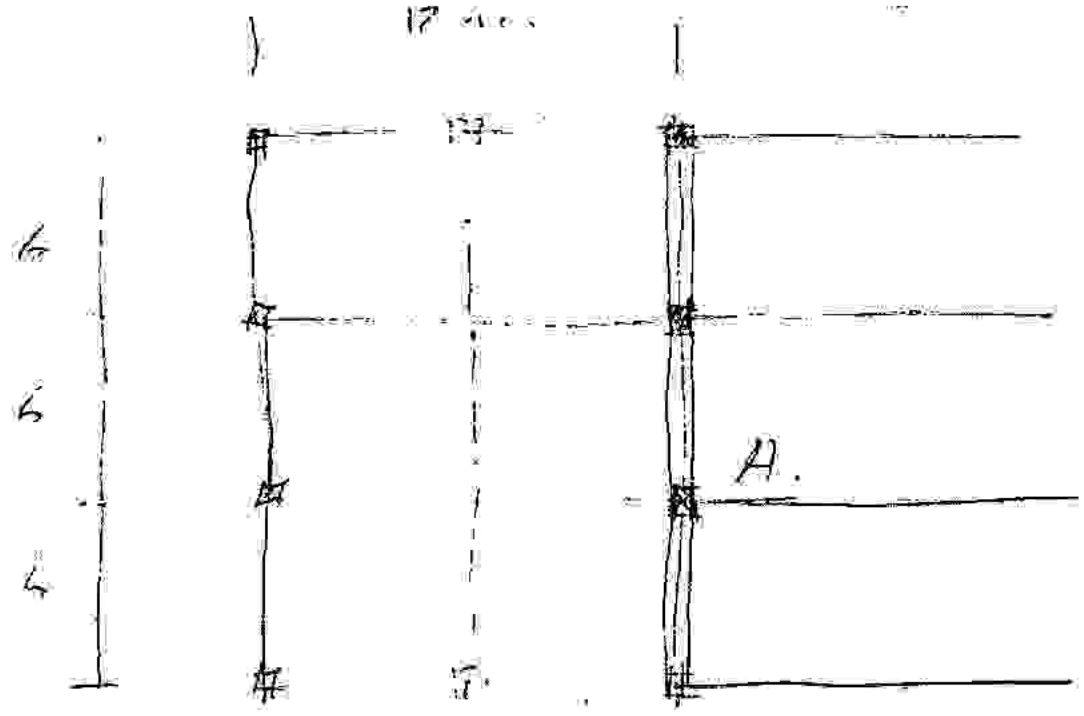
P= 3.4314 KN Q= 1.27802 KN
LOAD FACTORS 1.2 GK+ 1.2 QK+ 1.2 WK

HEIGHT ABOVE BASE	MOMENT KN-M	LOAD KN	AST sq.mm.	ASC sq.mm.
5.13	4.11	112.66	450.00	0.00
4.56	6.69	114.13	450.00	0.00
3.99	10.11	115.61	450.00	0.00
3.42	13.64	117.09	450.00	0.00
2.85	17.21	118.57	450.00	0.00
2.28	20.85	120.04	450.00	0.00
1.71	24.54	121.52	450.00	0.00
1.14	28.31	123.00	450.00	0.00
0.57	32.13	124.48	450.00	0.00
-0.00	36.02	125.95	450.00	0.00

REVERSAL OF STRESSES WIND IN OPPOSITE DIRECTION

P= 3.4314 KN Q= 1.27802 KN
LOAD FACTORS 1 GK+ 0 QK+ 1.4 WK

HEIGHT ABOVE BASE	MOMENT KN-M	LOAD KN	AST sq.mm.	ASC sq.mm.
5.13	2.33	60.68	450.00	0.00
4.56	4.72	61.91	450.00	0.00
3.99	7.16	63.14	450.00	0.00
3.42	9.66	64.37	450.00	0.00
2.85	12.20	65.61	450.00	0.00
2.28	14.81	66.84	450.00	0.00
1.71	17.46	68.07	450.00	0.00
1.14	20.17	69.30	450.00	0.00
0.57	22.93	70.53	450.00	0.00
-0.00	25.74	71.76	450.00	0.00



Col (A)

Roof Live 27 x 2 = 54 kN.

Roof Dead 40.65 x 2 = 81.3 kN.

Gutter Live 3.10 x 2 x 2 = 12.40 kN.

Gutter Dead 9.4 x 2 x 2 = 37.60 kN.

Gk = 118.9 Qk = 66.4 kN.

Column slenderness . Length = 5.7 m.

effective Length = 5.7 x 2 = 11.4 m.

$l_e/b = 11.4/.3 = 38.$

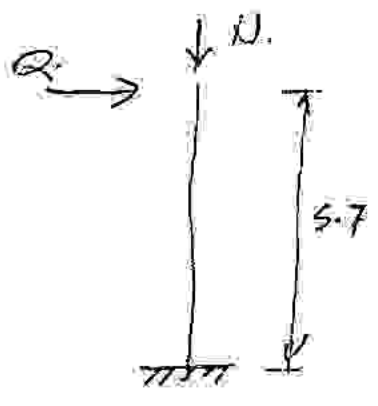
Eq. 34 $\beta_n = \frac{1}{2000}\left(\frac{l_e}{b}\right)^2 = \frac{1}{2000} \times (38)^2 = 0.722$

$a_n = 0.722 \times 1 \times .3 = 0.2166$

$M_{add} = N \cdot a_n = 0.2166\ N.$

From computer printout $2 = 1.28$ kN.

Col self wt 12.31 kN (17.23 ult).



Load case (1) $1.4 G_k + 1.6 Q_k +$ Self wt.

N = 289.93. kN.

M_{min} = 4.34 kN m. ? ; 67.13. kNm

M_{add} = 62.79 kN m.)

Load case 2. 1.2 Gk. + 1.2 Qk + 1.2 Wk.

N. = 237.13 kN.

M = Q x 5.7 x 1.2 = 16.68 kNm } 68.04 kNm

M add = .2166 x 237.13 = 51.36 kN. }

Load case 3. 1.0 Gk + 1.4 Wk.

N = 131.21 kN.

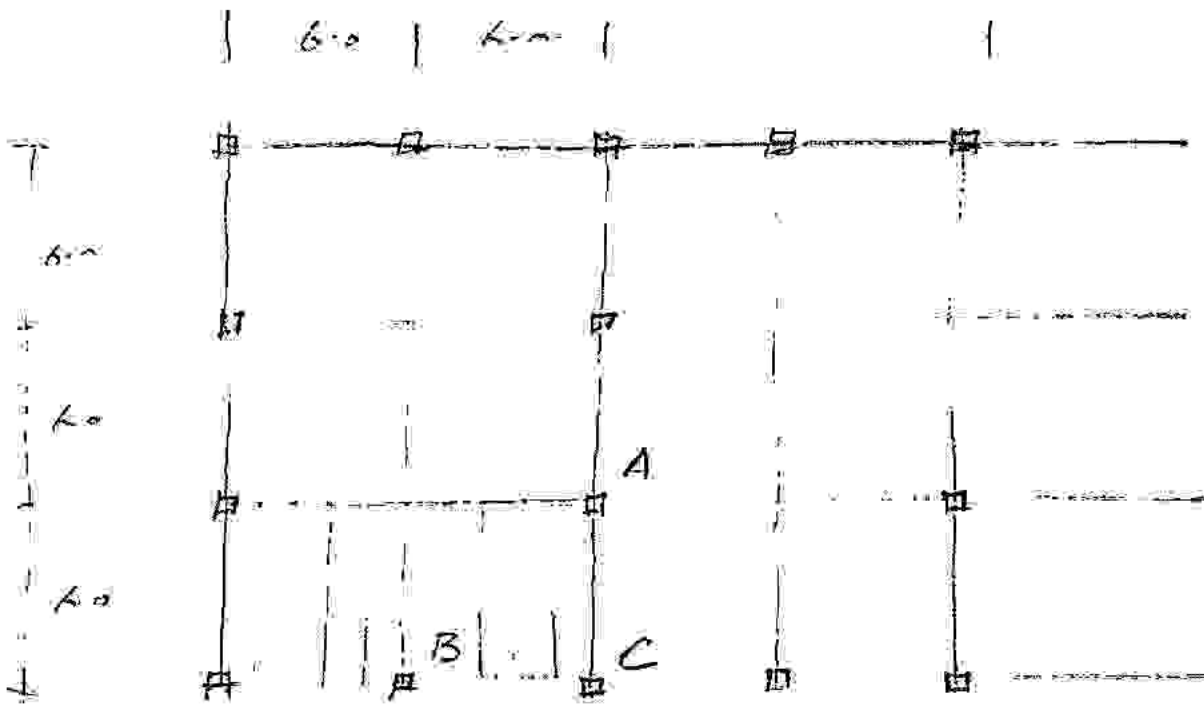
M add = .2166 x 131.21 = 28.42 kNm. } 38.63 kNm

M = 1.28 x 5.7 x 1.4 = 10.21 kN. }

Load Case	Factor.	N/bh	M/bh²	% steel	steel
1.	(1.4 Gk + 1.6 Qk)	3.22	2486	1.1	
2.	(1.2 Gk + 1.2 Qk + 1.2 Wk)	2.63	2.52	1.4	1265 mm²
3.	(1.0 Gk + 1.4 Wk)	1.05	1.43	0.81	

f_{cu} = 40 f_y = 460 d/h = 0.80.

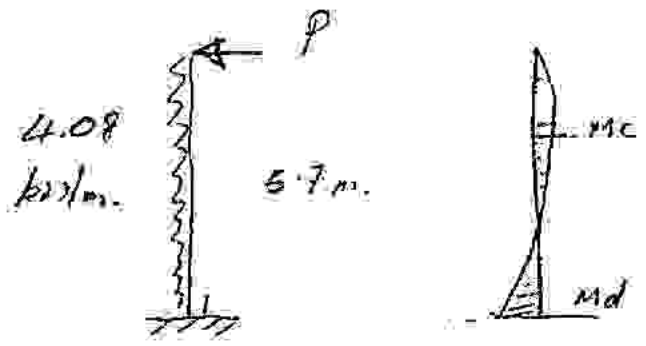
Use 4T25 bars 1380 sq mm/m for all reinforcement.



GABLE COL B.

Dead load on col. = 0.68 x 6 = 4.08 kN/m (downward)

GABLE COL DESIGNED AS PROPED CANTILEVER.



$M_d = 4.08 \times 5.7^2/8 = 16.563$ kNm

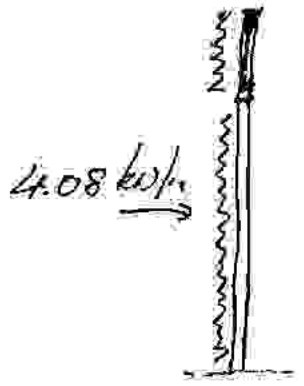
$M_c = 9 \times 4.08 \times 5.7^2/128 = 9.32$ kNm

Nominal Moment = Nominal Steel

Use -4T25 AS TOP BARS.

Prop force $P = 3WL/8 = 8.721$ kN.

GABLE COL C



(1) Wind loading on Beam carried by purlins

(2) Prop force P carried by purlins (or) transferred to column heads at both ends of beam

(1) Wind loading : P - force carried by purlin.

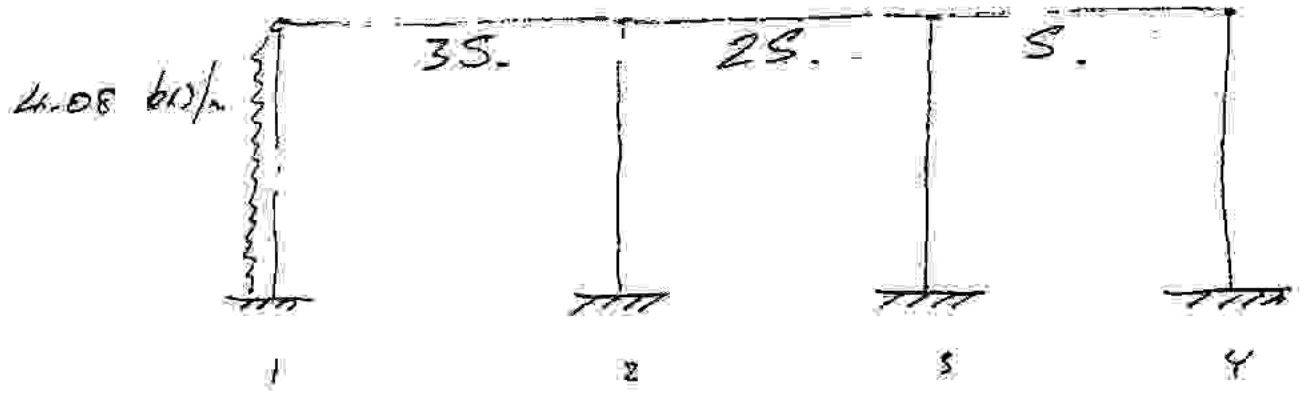
Total Wind load : $0.68 \times 12 \times 135 = 11.06$ kN.

Prop Force = 2×8.721 = 17.44 kN.

28.50 ↑

This load is spread over 4 BEAMS.

$29.5/4 = 7.125$ kN / bay. F = 7.125

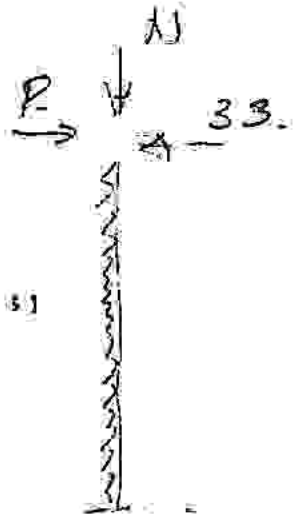


$$\Delta_1 = \frac{wL^4}{8EI} + \frac{RL^3}{3EI} - \frac{5}{3}\frac{wL^3}{EI} \qquad \Delta_4 = \frac{5L^3}{3EI} = \frac{F.L^3}{3EI}$$

$$\frac{wL^4}{8EI} = \frac{4}{3}\frac{5L^3}{EI}$$

$$\frac{wL}{8} = \frac{4}{3}F \quad \therefore \quad \frac{3wL}{32} = 2.18 = S$$

S = 2.18 kN



Col Loads.	—	kN.
Roof - Live	—	27.0
Purl Load	—	40.65
Gutter Live	—	3.10
Gutter Dead.	—	9.40

Gk = 50.05 kN

Qk = 30.10 kN.

COL DESIGN — metric S = 2.18 kN R = 7.175 mm

Slenderness ratio $\lambda = \frac{l_e}{r} = \frac{3.6}{0.216} = 16.67$

LOAD CASE 1 1.4 Gk + 1.6 Qk +

N = 135.46 kN.
M min = 2.03 kNm. } = 31.37 kNm.
M add = 29.34 kNm. }

LOAD CASE 2. 1.2 Gk + 1.2 Qk + 1.2 Wk

N = 110.95 kN
$M = (4.08 \times \frac{5.7^2}{2} + 7.175 \times 5.7 - 3 \times 2.18 \times 5.7) 1.2 = 83.53$ kNm
M add = 110.95 × 0.216 = 24.03 kNm
= 107.56 kNm.

LOAD CASE 3 1.0 Gk + 1.4 Wk

N = 92.46 kN.
$M = (4.08 \times \frac{5.7^2}{2} + 7.175 \times 5.7 - 3 \times 2.18 \times 5.7) 1.4 = 97.45$ kNm.
Madd = 97.46 × 0.216 = 20.02 = 117.47 kNm

LOAD	CASE	FACTOR	N/bt	N/bh²	% Steel	STEEL
1		1.4 Gk + 1.6 Qk	150	1.16	0.4	
2		1.2 Gk + 1.2 Qk + 1.2 Wk	1.23	3.98	2.8	
3		1.0 Gk + 1.4 Wk	1.02	4.35	3.0	2900 mm

f_{cu} = 40 f_y = 460 d/h = 0.80.
USE 8T25 bars (3927 mm).

LOAD CASE 3. WIND 1.0 m UP FROM BASE.

N = 90.30 kN.

M = (4.05 × 47/2 + 7.185 × 4.7 − 3.216 × 4.7) 1.4 = 66.53 kN.

M_{add} = 23.113 × 0.2166 = 17.37 kN.

83.90 kN.m

Item	Force	Factor	N/bh	M/bh²	% Steel	Steel
1.	1.0 Dk + 1.4 Wk.	1.00	3.19.	7.1		4 Ø 20 mm²

Use 4725 (1963) mm after 2.0 m.

PURLINS:

Span 6.0 m Spacing 1.750 Load = 1.15 kN/m.

Use Multibeam 203/178 Purlins

End Bay 203/228

SHEETING RAILS.

Span 6.0 m Spacing 1.8 m Load 0.68 kN/m²

Use F 140/175 Rails (Rails Fixed Between c.f.s).

STRUT - FORCE CAPACITY OF PURLIN.

TOTAL HORIZONTAL LOAD = 28.5 kN.

∴ LOAD / PURLIN : 28.5/8 - 3.56 kN.

Clm factor = 0.850 r_{yy} = 20.44 mm

Effective Length = 0.85L = 5100 mm

$E_c/_{cy}$ = 247.5 - factor 'a' = 1.0.

From Table 6. - B.S. 449 Pt 2.

P_c = 14.10 N/mm².

STRUT Capacity : 14.10 × 678.6 = 9.56 kN.

∴ Purlins provide adequate lateral restraint to Roof Beam

Job No. INDUSTRIAL UNITS AT CLONDALKIN.

Sheet No. 87/11/28

Calculated by

Checked by POLLARD DETAILS

Sheet No. 15

Date 17-2-90

Design Ref.

Calculations

Output

Provide 8 TES BARS ABC & COL HEIGHT & 4 TES ABOVE.

Y

T25 T25

X

R10 @ 200

T25 T24

Y

B - B (300 x 300 LS2)

Y

T25 T25 T25 T25

X X

R10 @ 200

T25 T25 T25 T25

Y

B - B (300 x 500 LS2)

2700

3000

5700

f_{cu} = 40 N/mm²

f_y = 460 N/mm²

f_{yv} = 250 N/mm²

Cover 40 mm to ALL REINFORCEMENT.

Job No

Sheet No 16

Date

Output

Calculations

CHANGE GABLE COLUMNS TO
400 x300 TO SUIT UPSTAND DETAIL

CHANGE COLUMNS AT DOOR OPES
TO 500 x300 TO SUIT DOWN PIPE
PROTECTION INSIDE DOOR OPE