

POWER RISE.

COUNCIL OFFICES. COVENTRY.

Terence Gregory, City Architect and Planning Officer.

- CLIENT Coventry City Council.
- SITE Part of civic area redevelopment scheme with pedestrian decks.
- ACCOMMODATION Office space, registry, conference room, printing department, central services.
- STRUCTURE In situ r.c. construction with steel columns erected from roof downwards by patented system of hydraulic jacks. Precast external wall panels and mullions. Double glazed steel windows.
- SERVICES Fully air conditioned induction unit heating. Water heating from oil-fired boilers. Permanent artificial supplementary lighting. District heating installation in basement.
- COST £576,500.
- CONTRACT January 1967 - March 1968.  
Principal architect, W.G. Sealey.  
Assistant principal, J.C. Beaumont.  
Assistants, D.K. Hartley and J.R.W. Parker.  
Quantity surveyor, R.F. Lear.  
Joint structural engineers, N. Rayman, City Engineer and Surveyor, with Felix Adler and Partners.  
Services consultant, City Engineer.

(ARCHITECTURAL REVIEW Jan 1967)

INTRODUCTION The Jackgrip Mark 3 is a lifting unit employed by the construction industry to erect tall buildings. It raises structural steel columns under loan in a continuous process and additional column lengths (one or two storey high) are fed in from beneath as the erection proceeds.

The unit Handles 8" Universal Columns, solid steel sections of up to 8" x 9" and 12" Universal Columns of up to 190 lbs/ft weight. The maximum lifting capacity is 600 tons. The maximum erection speed is one floor per day. Each unit weighs approximately seven tons.

DESCRIPTION The unit combines two sets of hydraulically operated wedge grips with hydraulic jacks in between and is supported by a trestle or stools.

The grips hold and release the column alternately. The jacks lift the column as the upper grip is engaged and the lower grip is released. Then the lower grip is engaged and the jacks are retracted thus releasing and lowering the upper grip.

This process is repeated, raising the column under loan by increments of 12" or 18". The column is always held by one of the two grips. Pressure is maintained on the lower grip to act as safety device preventing any drop of the column.

The assembly is supported by the trestle which incorporates the column feed.

The column guide is provided above the upper grip to stabilise the column laterally. It is either incorporated in the casting bed or below.

The electronic sensing unit is engaged with the column and feeds information to the synchronising console. The sensing unit is attached to the lower grip.

Every jackgrip has its power pack consisting of pumping units driven by electric motors, and solenoid valves operated from the console.

The console synchronises the lifting of twenty jackgrips but a number of console units are coupled to operate larger numbers of jackgrips. Push button control is incorporated to override the automatic control.

The solenoid valves are operated from a central electric switchgear which in turn is monitored by the feed back from the console.

#### CONSTRUCTION SEQUENCE

1. The foundations are constructed first. Feed pits are provided; their depth varies to suit the geometry of the elevation of the building.
2. The jackgrips are erected on the foundations with the top-most column length inserted.
3. The casting bed is constructed thereafter to be vertically supported by the stools but stabilising the stools laterally.
4. The building is now erected starting with the construction of the roof at casting bed level.
5. After the erection is completed the feed pits are filled in with concrete and the bottom-most column length is underpinned by the base plate and connected to the foundation. The grips are now taken apart and the entire assembly is dismantled and re-used elsewhere.

**Collection Number: A1434**

**Colin Goodman Papers, 1930-1972**

**PUBLISHER:**

*Publisher:- Historical Papers Research Archive*

*Location:- Johannesburg*

©2014

**LEGAL NOTICES:**

**Copyright Notice:** All materials on the Historical Papers website are protected by South African copyright law and may not be reproduced, distributed, transmitted, displayed, or otherwise published in any format, without the prior written permission of the copyright owner.

**Disclaimer and Terms of Use:** Provided that you maintain all copyright and other notices contained therein, you may download material (one machine readable copy and one print copy per page) for your personal and/or educational non-commercial use only.

People using these records relating to the archives of Historical Papers, The Library, University of the Witwatersrand, Johannesburg, are reminded that such records sometimes contain material which is uncorroborated, inaccurate, distorted or untrue. While these digital records are true facsimiles of paper documents and the information contained herein is obtained from sources believed to be accurate and reliable, Historical Papers, University of the Witwatersrand has not independently verified their content. Consequently, the University is not responsible for any errors or omissions and excludes any and all liability for any errors in or omissions from the information on the website or any related information on third party websites accessible from this website.

This document is part of a collection held at the Historical Papers Research Archive, The Library, University of the Witwatersrand, Johannesburg, South Africa.