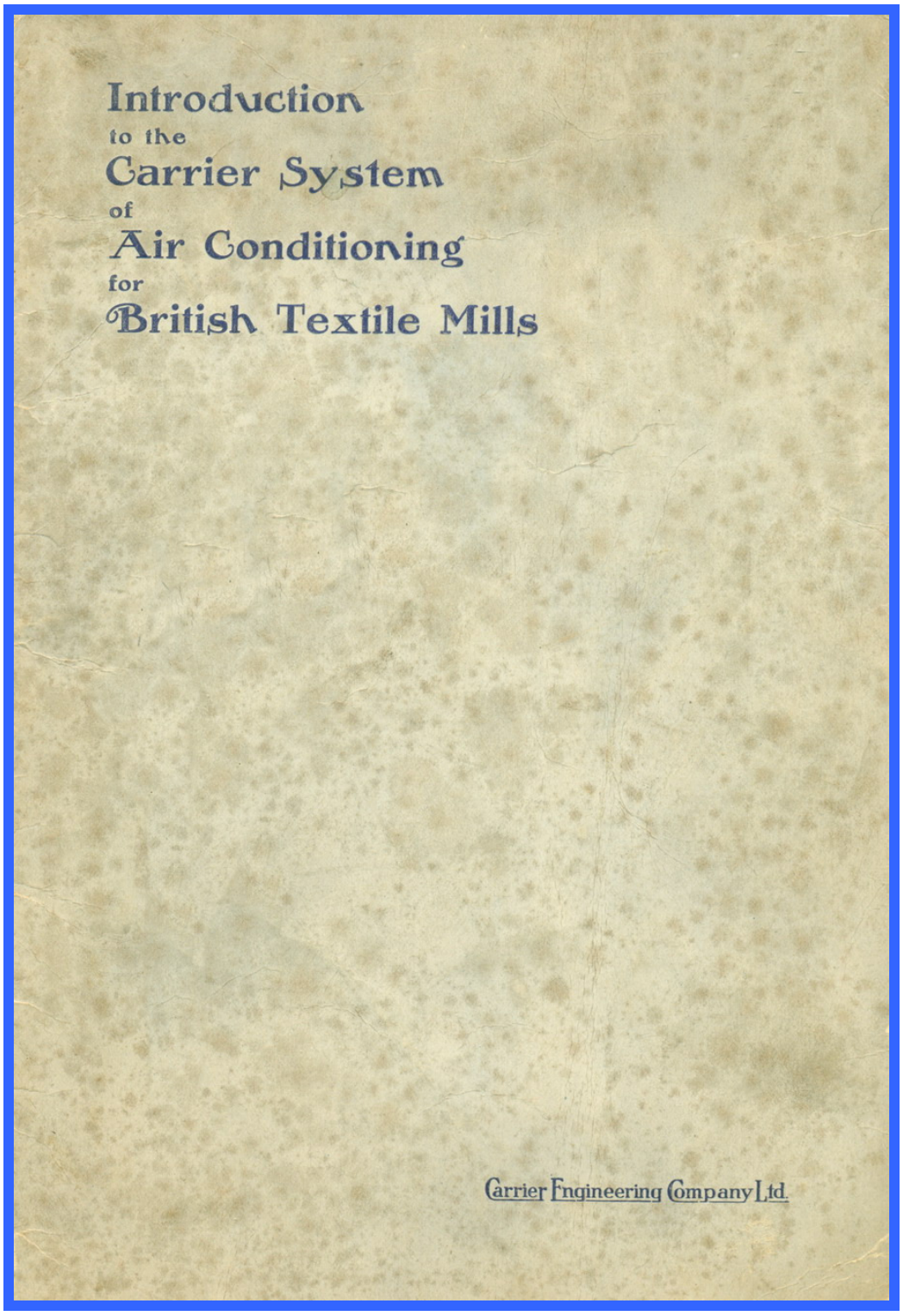
CARRIER ENGINEERING CO LTD, LONDON



Treatise No. 102, 1920
(CIBSE Heritage Group Collection)

AIR CONDITIONING IN THE BRITISH TEXTILE MILLS

The old time supremacy of England as a textile nation was due principally to the fact that her climate is moderate, moist, and naturally well-suited to textile manufacture.

In the early days, when the industry was young, most of the machines were driven by hand or foot power, and even when steam power first came into use the machinery was scattered over comparatively large floor areas, so that its mechanical heat was quickly absorbed by the large volume of surrounding air. Today, when textile machinery, running at tremendous speed, is grouped closely on the floor, the mechanical heat is so great that some artificial means of absorbing it must be provided, even in England, in fact, everywhere, because no suitable natural atmospheric condition exists anywhere in the world. The modern mill presents a more complex problem in air conditioning because it produces over a hundred times more yarn or cloth per square foot of floor area, than the early mills.

The pioneer textile manufacturer had to select his mill site with careful regard to climatic conditions, oftentimes sacrificing other advantages to this then essential consideration.

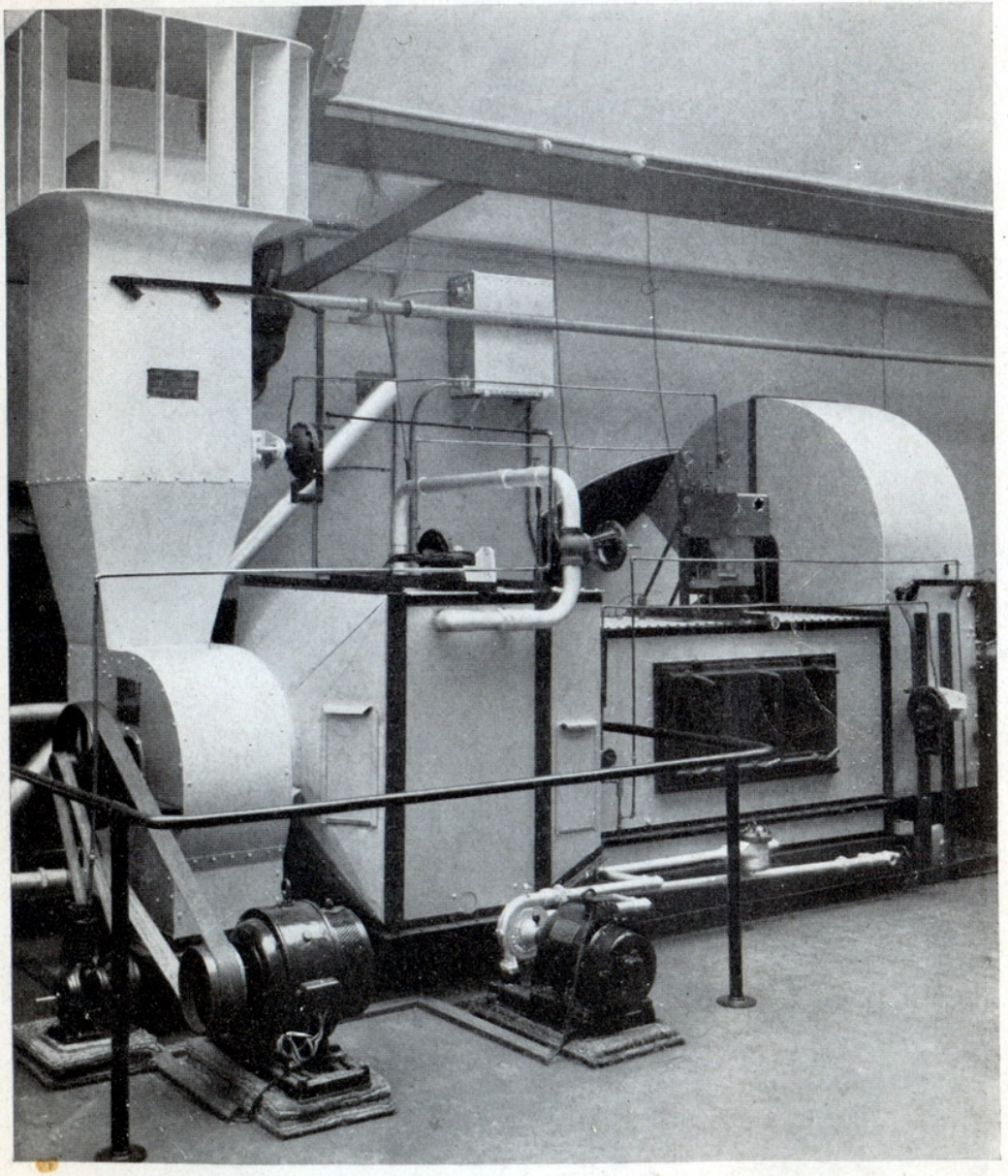
The considerations which guide the manufacturer of today in the location of his mill, should be entirely independent of climate. The modern manufacturer manufactures his own weather, to order.

Take, for instance, a spinning room, 300 ft. long by 100 ft. wide, in which 500 H. P. is used to drive the spindles. The law of Conservation of Energy tells us that we cannot destroy energy, but can only convert it from one form into another. Therefore all of the energy represented by this horse power does not disappear but is dissipated into the mill as heat, being equivalent to 1,270,000 British Thermal Units per hour, which is more than enough to maintain the temperature of the spinning room in the coldest weather.

Take the aforementioned spinning mill as an example, with the following outside conditions:

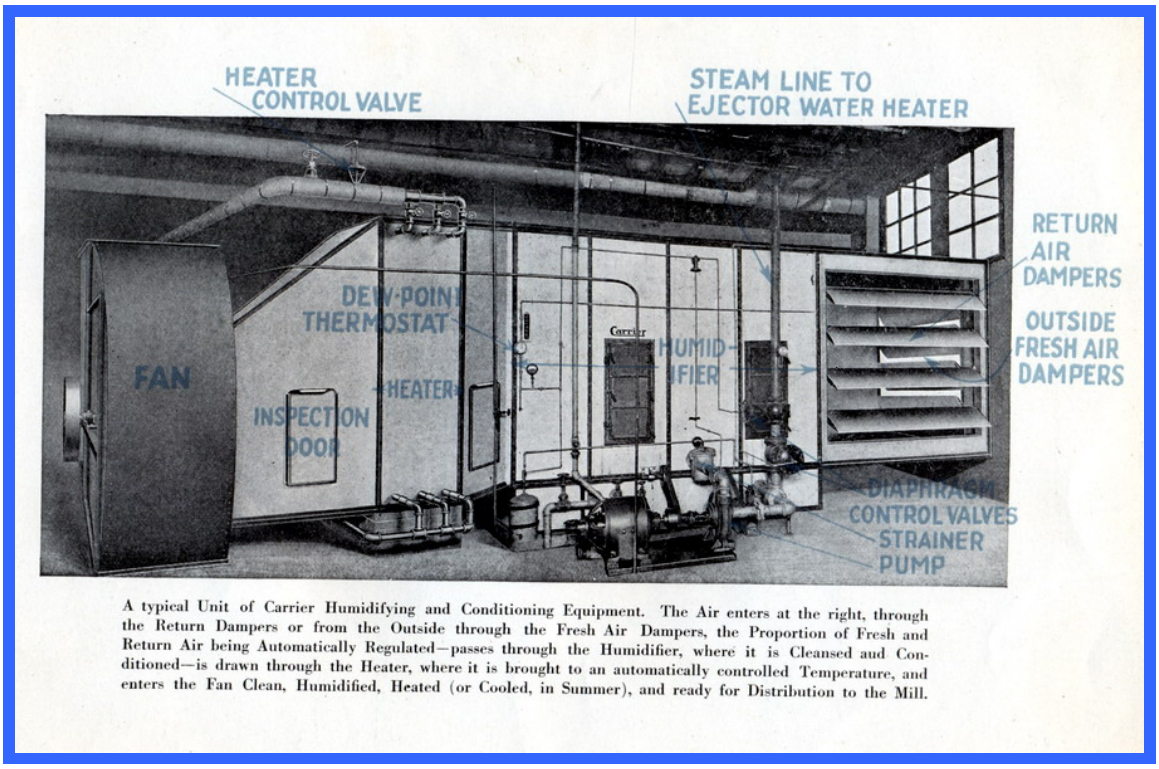
55 deg. F. dry bulb temperature and 52 deg. F. wet bulb temperature, giving a Relative Humidity of 80%.

Introduction



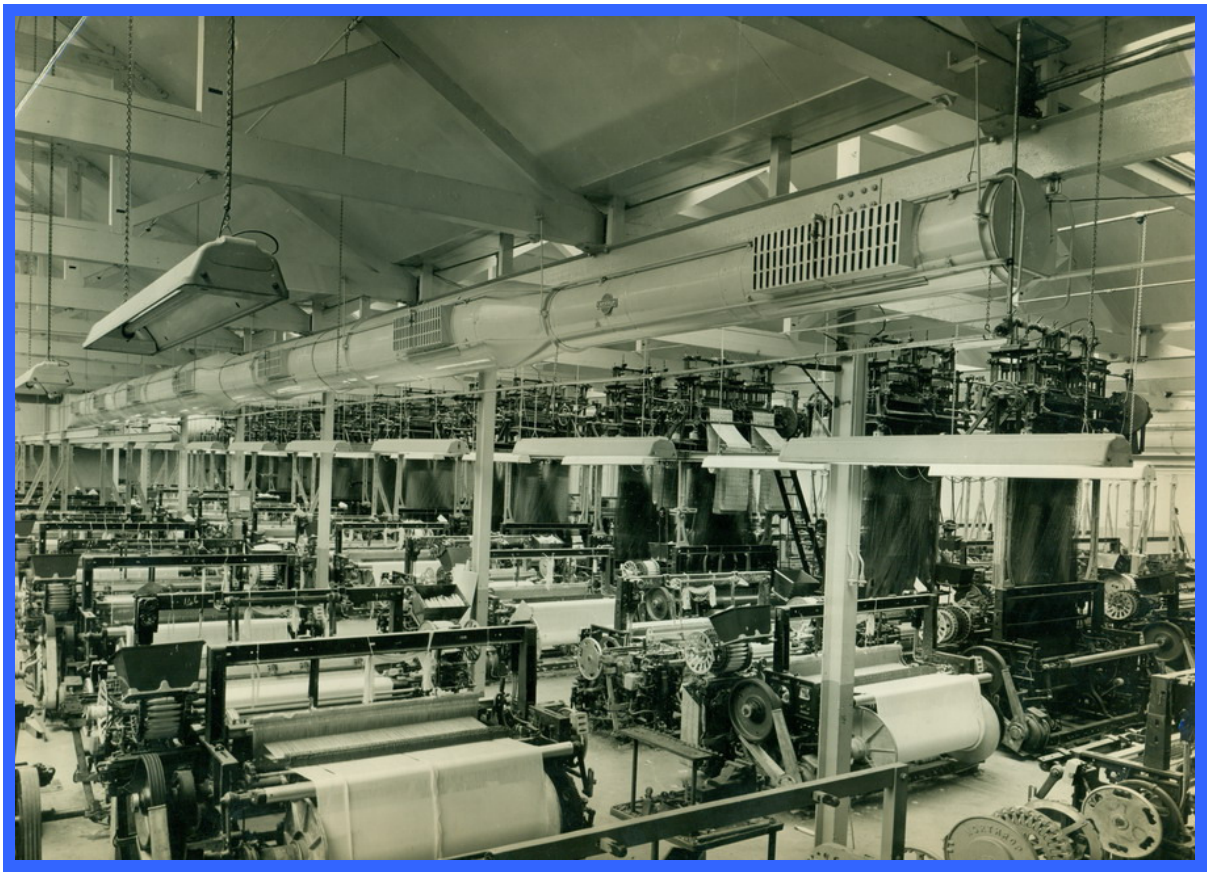
Carrier Equipment in the Chamber of Commerce Testing House, Manchester, England. This is the foremost conditioning house in the textile industry and has adopted the Carrier System in preference to all other American and European apparatus.

Photograph and text actually taken from the 1916 USA Bulletin



A typical Unit of Carrier Humidifying and Conditioning Equipment. The Air enters at the right, through the Return Dampers or from the Outside through the Fresh Air Dampers, the Proportion of Fresh and Return Air being Automatically Regulated—passes through the Humidifier, where it is Cleansed and Conditioned—is drawn through the Heater, where it is brought to an automatically controlled Temperature, and enters the Fan Clean, Humidified, Heated (or Cooled, in Summer), and ready for Distribution to the Mill.

Typical Humidifying & Conditioning Apparatus
Also taken from the USA Bulletin with notes in blue added



Carrier installation in Gartside & Company Weaving Shed, Rhodes No.1 Mill, Middleton, Lancashire, c.1950 (CIBSE Heritage Group Collection)

Carrier system of mixing dampers for Weaving Shed at Bedford Mill for Courtaulds of Leigh, July 1949 (CIBSE Heritage Group Collection)

Carrier installation at Stanhill Ring Mill, English Sewing Cotton Company Ltd, about 1950 (CIBSE Heritage Group Collection)

Carrier installation for a Weaving Shed at No. 2 Mill, Rock Nook for Sladon Wood, 1949 (CIBSE Heritage Group Collection)

Carrier installation in a Weaving Shed for Gartside & Company, Waterside Mill, 1950 (CIBSE Heritage Group Collection)