EAllentown



About Allentown



 Local to major airports and seaports



- Local to major airports and seaports
- 10 hectacre campus



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- 10 hectacre campus
- 18,500 square meters of manufacturing





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- On site simulation animal holding room



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- CNC punch presses
- Carbon Dioxide Lasers
- 6-axis weld robots
- CNC grid welding stations

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- 500 metric tons thermoplastic /year
- 2,500 IVCs produced/year

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Profile

- Manufacturers of
 - IVCs
 - Biological Work Stations
 - Plastic Caging
 - Kennels
 - Primate Caging
 - Rabbit Caging

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Experience

Experience

- 46 years in the field
- 26 years manufacturing IVC systems
- 20,000+ IVC systems world-wide
- Leading supplier of Auto-water IVCs
- Leading supplier of HVAC-integrated IVCs
- Extensive experience with robotic cage handling

- Joint Development of Automatic Watering with Edstrom
- Pioneered use of Udel plastic
- Pioneered "Smart" Blower Technology
- Pioneered ECOFLOW Blower
- Wi-Communication
- Sensus Vantage Wivarium

- Innovation
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• Facility Planning



- Facility Planning
- Installation



- Facility Planning
- Installation
- Training



- Facility Planning
- Installation
- Training
- Preventative Maintenance
 - Certification
 - HEPA Replacement



- Facility Planning
- Installation
- Training
- Preventative Maintenance
- HVAC Integration



Staff

300 Employees
25 Engineers
Global Sales Force
With Subsidiaries and Distributor



Subsidiaries Locations

- Allentown, New Jersey, USA
 - Corporate Headquarters
 - Manufacturing
- Reading, UK
 - Sales & Service
 - Distribution Center
- LePortel, France
 - Sales & Service
 - Distribution Center
- Milan, Itay
 - Sales & Service
- Frankfurt Germany
 - Sales & Service











World Wide Distribution

- Japan
- Taiwan
- China
- Singapore
- Thailand
- Korea





(::



- Netherlands
- Australia
- Israel
- Spain
- Brazil
- India













Clientele

- Pharmaceuticals
 - Astra-Zeneca
 - Glaxo-Smith Klein
 - Merck
 - Novartis
 - Pfizer
 - Sanofi
 - Schering-Plough

- Biotechnology
 - Amgen
 - Clintrials
 - DNAX
 - Genentech
 - Therrimune
Clientele

- University
 - Karolinska
 - Univ. Zurich
 - Imperial College
 - Cornell
 - Columbia
 - Johns Hopkins
 - Harvard
 - Yale

- Government
 - NIH
 - CDC
 - USAMRIID
 - NCI
 - USDA
 - Riken (Japan)
 - Veterans Administration

Environmental and microbiological aspects of animal housing from the beginning to the IVCs

Animal Research Concerns



Pioneers

Dr. Nathan Brewer

Introduction to Lab Science in the mid-20's at Michigan State

"Guinea pigs kept in abandon horse stalls or on the floor. Rats and mice were kept on homemade wire cages or in glass jars"...

• Dr. Henry Foster – addresses facilities up to the late 1940's

" The common denominators the were most frequently seen in the majority of early facilities were wooden structures with wood and sometimes concrete floors, screened windows, doors for ventilation and wooden cages and racks to house animals."

Pioneers

W.T.S Thorp NIH Facility 1954
<u>Advent of contemporary research</u>.

"Significant design features include the clean and dirty corridor concept, indoor-outdoor dog runs, modern facilities devoted to aspetic animal surgery and year-round air conditioning and ventilation of 10-12 air changes per hour with no recirculation"

The Laboratory Animal Facility

• Animal Care Panel (AALAS) founded 1950

- 14 years after AALAS
- Facilities Standards Committee

THE GUIDE

- Guide for Laboratory Animal Facilities and Care
- First published in 1963
- Revised 1965, 1968
- 1972 Guide For the Care and Use of Laboratory Animals
- Revisions 1978, 1985, 1996

Basic Cage Guidelines 1963

- Adequate Space
- Easy Access to Food and Water
- Meeting the Biological Need

Cage Materials

- Wood
- Galvanized
- Chrome Plated, Nickel Plated
- Aluminum
- Stainless Steel
- Plastics

Cage Design

1941-John Bittner - Duplex plywood mouse cage





Shoe Box Cage



Cage Types

SANITARY ANIMAL CAGES



Norwich RK

SMALL ANIMAL CAGE

A low cost sanitary cage for small animals. Unmatched for Vitamin work at low maintenance cost. The frame is welded to the cage. There are no crevices or pockets where vermin and dirt can gather. NORWICH hot dip galvanizing of all parts after fabrication means smooth, sanitary surfaces. Top is hinged and has a spring catch. Easily attended, solidly constructed, adaptable to many uses in the modern laboratory.

DIMENSIONS: Diameter, 9 1/2" - Height, 9"

K-T--6" Overall Height

Norwich RK-T

CAGE TRUCK

Holds 30 NORWICH RK Cages. Designed to give the modern laboratory years of efficient sanitary service. Simple to clean. Removable pans under the wire mesh trays assure exceptional sanitation. Trays are made rust-resistant by NORWICH hot dip galvanizing process. Paper roll brackets on one end. Solid, all-welded angle and channel iron frame which will not warp out of shape. Truck is mounted on ballbearing swivel casters with noiseless rubber tread wheels.

DIMENSIONS: 62" x 21" x 51" High

Suspended Cage Systems



Lab Products

Rodent Auto Flush Electronic RotoFlush

Pens and Colony Cages

Squeeze Cage

- Primate
- Socialization

Glass Plastic Baboon Cage 1965

CAGE DIMENSIONS (inside) 33" wide x 60" high x 36" deep Height of bench above false floor - 20". NOTE: Cage body is available in opaque green interior or may be translucent to admit additional light. There is a slight additional cost for translucent cages.

Metabolism Cage

Collection of Urine and Feces

Introduction to Plastics

- 1953 first plastic cage
- Thoren Caging
- Maryland Plastics

Shoe Box Cage

Suspended Cage Systems

Plastics, Plastics, Plastics

- Polystyrene 1953
- Polypropylene 1960
- Polycarbonate 1962
- High Temp Polycarbonate -1968
- Polyetherimide 1988
- Polysulfone 1994
- Polyphenylsulfone 1995

Specific Housing for Containment /Isolation

Dr/ Liz Craft – 1958 introduced the Filter at the cage level

Containment/Isolation

Slide Courtesy of : Lab Products, Inc.

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Static Isolation-Advantages

- Isolate at Cage Level
- Reduce Cross Contamination
- Nudes,SCID,Transgenic,Knockout,etc.
- Reduce Allergens, Bedding, Debris

Static Isolation-Disadvantages

- Inadequate Cage Ventilation
- Poor Micro Environment
- Vapor Barrier
- Ammonia & Co2 Levels
- Husbandry Cost

Individually Ventilated Micro-Isolation

To eliminate this disanvatages, in Mid 1960's Edwin P. Les Developed the Hollow Shelf Design.

First company that produced the ventilate cage was Thoren Caging 1978 for Jackson Labs

Air Delivery

PIV TYPE IIA


Air Delivery











Air Delivery





Benefits of Individually Ventilated Cages

Improved Welfare

- Reducing the levels of CO₂ and NH₃ build up in the cage and protecting the animals from particulate and micro-organism contact.
- Extended Cage Change Periods ; reduces impact and stress on animals and micro environment
- Better management of Microbiological Health Status
- Proven Improved breeding performance observed with various colonies including Transgenic Lines
- Reduced allergens in the room, good for the technicians that work in the facility

Benefits of Individually Ventilated Cages

IVC Rack Systems

- IVC's offer improved protection by delivering air by means of fans/blowers through HEPA filters and into the base of the cage (Allentown) thus delivering a much more "Controlled" Environment within the cage.
- IVC Units can be operated in either positive pressure to protect the animals in the cage or negative to protect external environment from animals and airborne allergies.
- Ability to control the environment at the cage level instead of the room, keeping the temperature and humidity in the cage balanced

Benefits of Individually Ventilated Cages

Resource saving

Energy Saving;

- Allentown racks are usually set to operate at 50ACH
- Low Energy Consumption Blowers
- Increased stocking density in rooms
- Extended Cage Change Periods; Reduced Staff Costs Reduced bedding costs Reduced Energy Costs – Cage Wash/Sterilisation Process

Bioconteinment







Airflow Design Path



Detail Of Air Plenum Apertures





Thank You!