
COMPARISON
OF
ALTERNATIVE
CAGE-FREE
SYSTEMS FOR
THE U.S.

Two Main Product Families for Cage-Free Systems:-

1.0 Original-design cage free modules and aviaries

- Designed from basics as cage-free.
- Key features:
  - Allows for bird movement
  - True nests with protected egg belt

2.0 Cage-based systems

- Adaptations of enriched-module designs
- Key features:
  - Limited movement of the flock
  - Enclosure-type nests with cage-type egg belts

Two Large Product Families (contd.)

1.-**Original Design cage-free/aviaries**

1.1-Confinement Systems

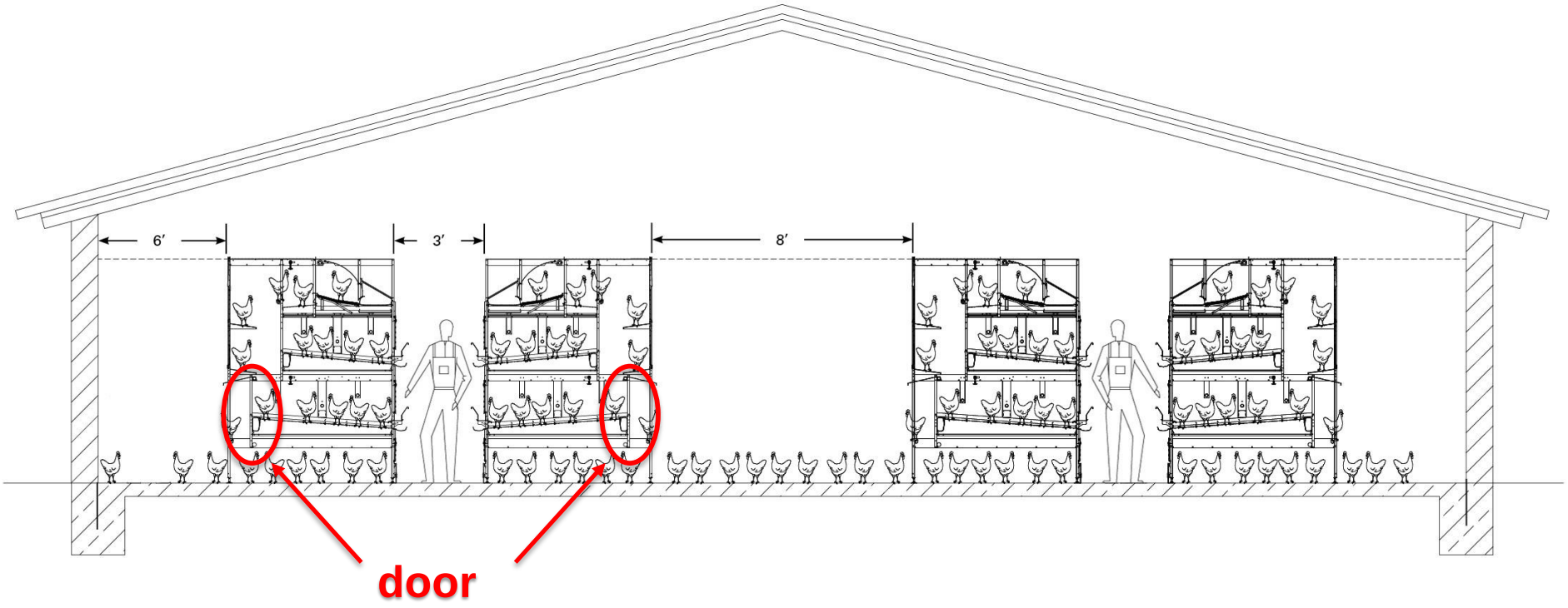
1.1.1-With inspection aisles

(accessible to workers only)

1.1.2-Without inspection aisles

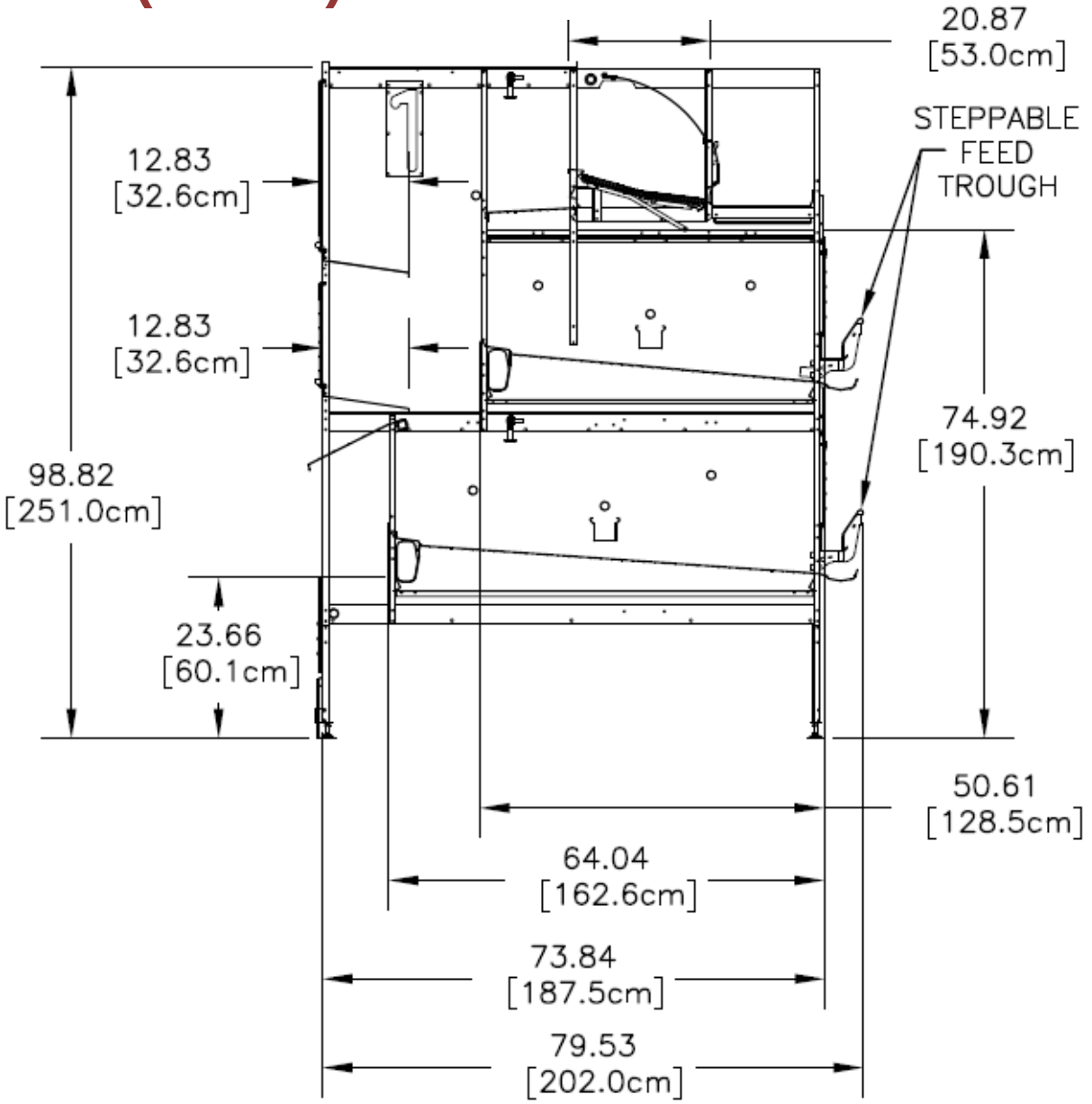
1.2-Open Systems

1.1.1- Confinement with Inspection Aisles

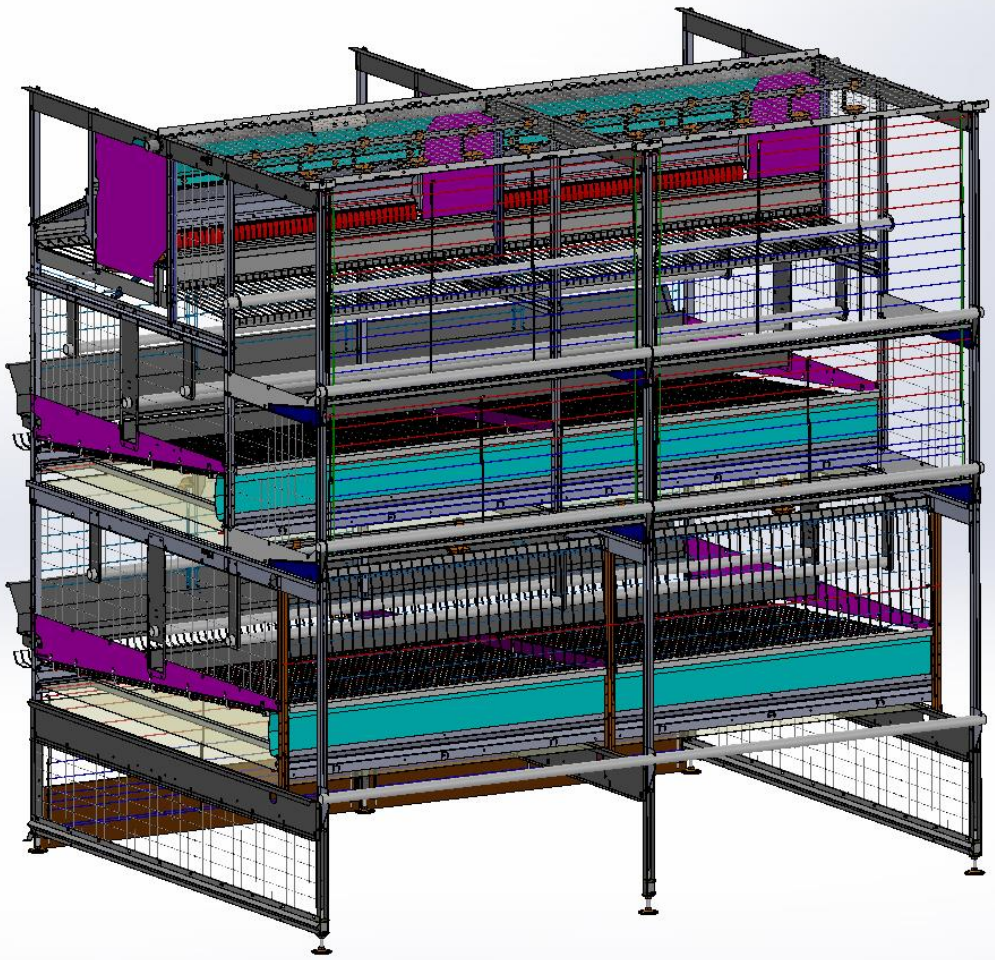


1.1.1- Confinement with Inspection Aisles (contd.)

PROFILE



1.1.1- Confinement with Inspection Aisles (contd.)



1.1.1-Confinement With Inspection Aisles (contd.)

Pros

- Allows for confinement after transfer to allow the flock to orient to nests, feed and water (training)
- Allows for confinement in the early morning leading up to peak production
- Optimal bird movement
- True nest with protected belt

  These features yield the fewest non-nest eggs
- Worker friendly inspection aisles
  - Advantageous with flighty pullets
  - Easiest cage free system to manage
- Well proven design

Cons

- One certifying agency objects to doors

1.1.1-Confinement With Inspection Aisles (contd.)
Advantages of confinement at the onset of production

- Easy transition of flocks from pullet rearing to production
- Pullets rapidly learn to access nests, feed and water, results in fewer floor eggs, hence higher saleable production
- When confined, hens can move up and down the tiers through inside access. They can express every natural behavior, including scratching and dust - bathing on staircase of the system
- When confined, aisles can be much more easily prepared before release of the flock
- Less dust during routine management enhances conditions for workers

1.1.1-Confinement With Inspection Aisles (contd.)

Advantages of locking birds in for a few hours in the morning

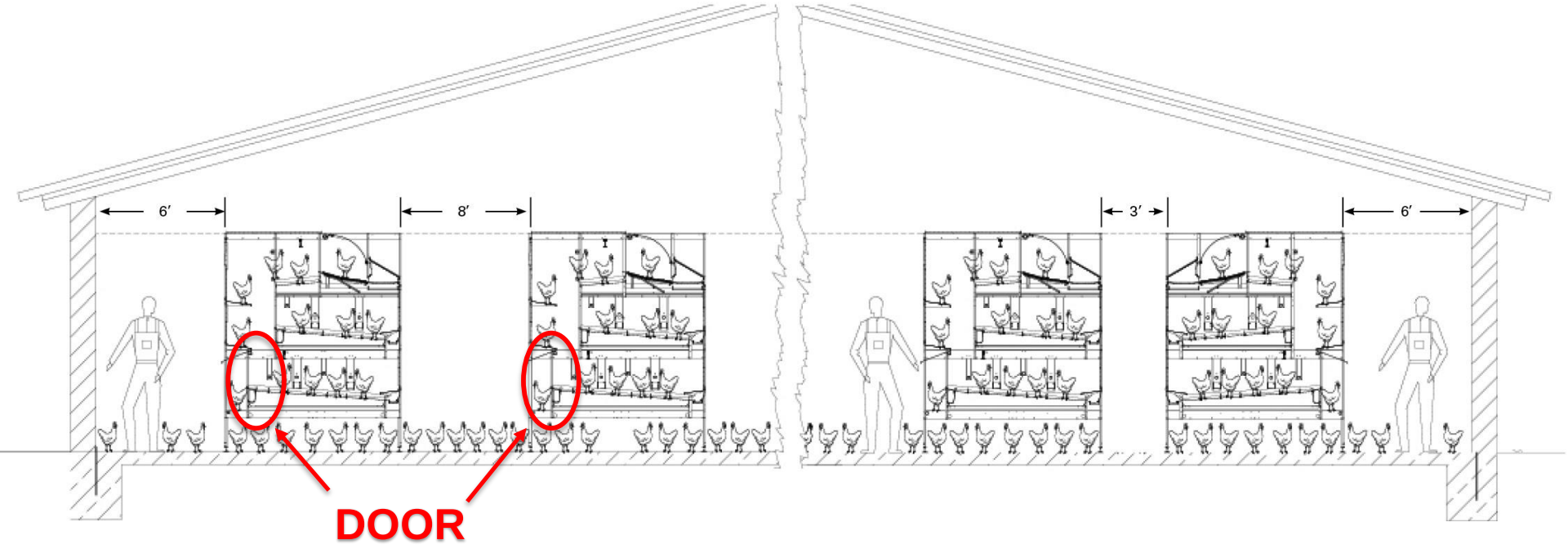
- Direct birds towards nests, drinking and feeding activities This promotes a higher proportion of saleable eggs laid in nests
- While confined, hens can move up and down the tiers through the inside access allowing expression of natural behaviors, including scratching and dust bathing on staircase of the system
- When the flock is confined, aisles can be inspected and worked on easily
  - Convenient to retrieve floor eggs which enhances food safety and limits future floor-laying
  - Easier to control litter moisture and texture
  - More acceptable environmental conditions for workers

1.1.1-Confinement With Inspection Aisles (contd.) as shown below

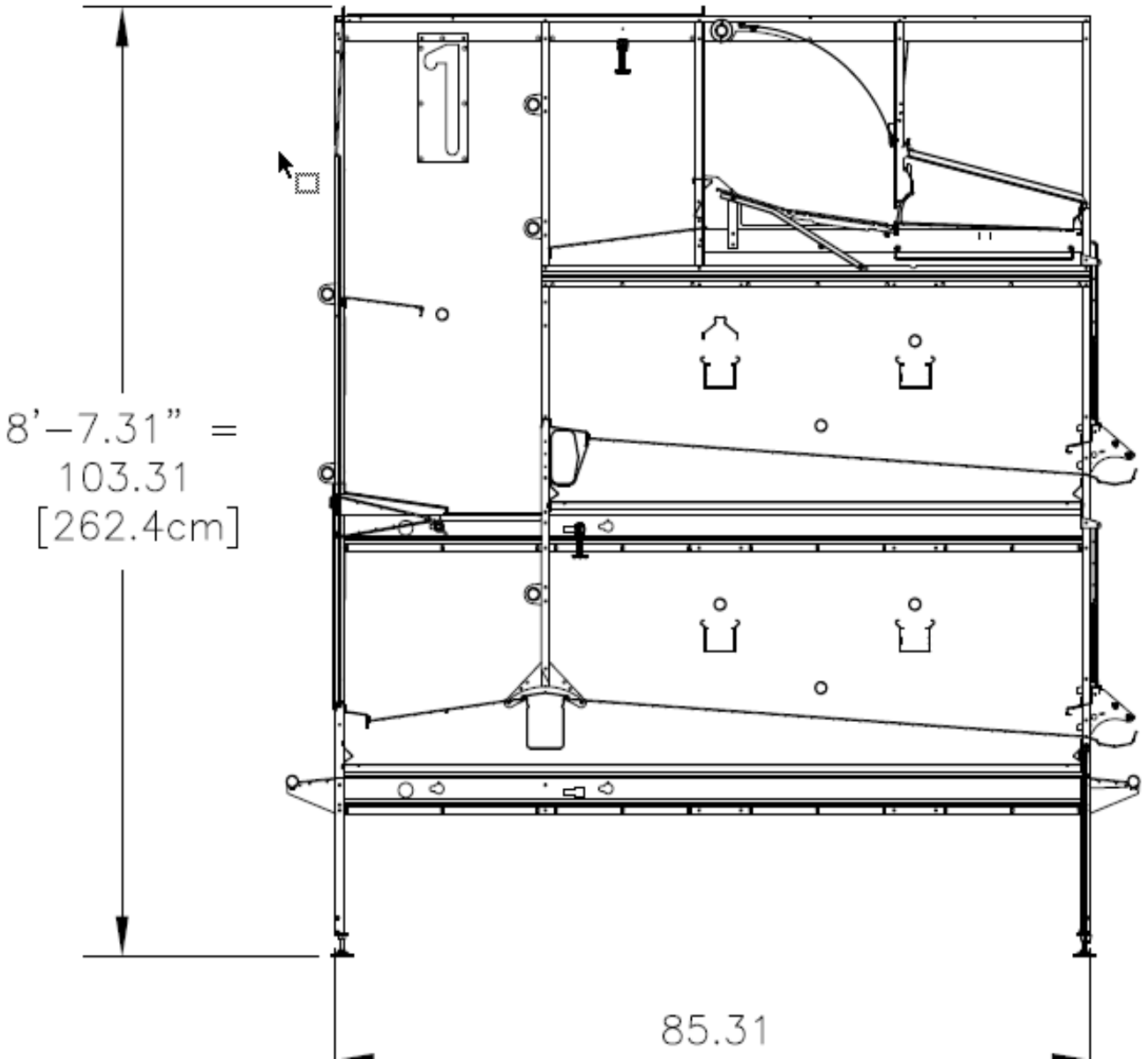
1.1.1-Confinement With Inspection Aisles (contd.)
Pullets in modules, leaving aisles empty

1.1.1-Confinement With Inspection Aisles (contd.)
Aisles populated after doors are opened

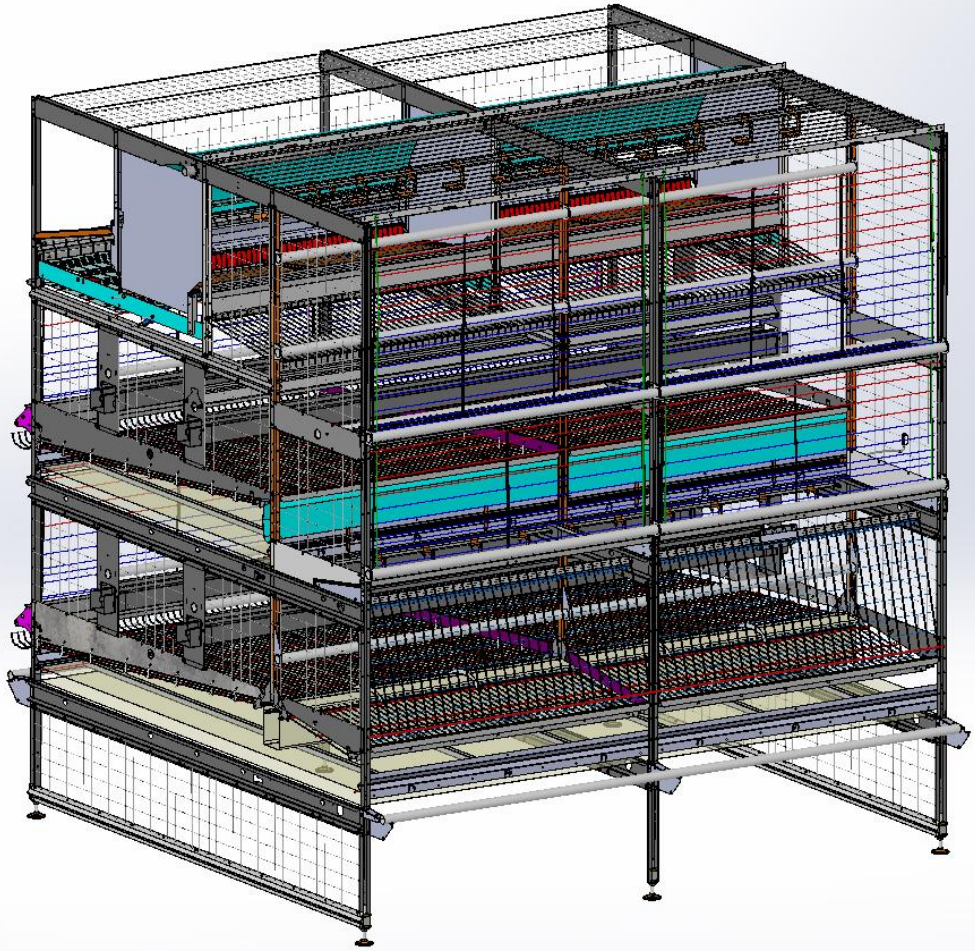
1.1.2-Confinement Without Inspection Aisles



1.1.2-Confinement Without Inspection Aisles (contd.)



1.1.2-Confinement Without Inspection Aisles (contd.)



1.1.2-Confinement Without Inspection Aisles (contd.)

Pros

- Allows for confinement to the system at the beginning of cycle for more effective training
- Allows for confinement early in the morning leading to peak production
- Optimal hen movement
- True nest with protected belt
- *These features yield a low proportion of non-nest eggs*
- Well proven design

Cons

- One certifying agency objects to doors

1.1.2-Confinement without Inspection Aisles (contd.) Doors opened

1.1.2-Confinement without Inspection Aisles Showing Flock Activity (contd.)

1.1.2-Confinement without Inspection Aisles Showing Flock Activity (contd.)

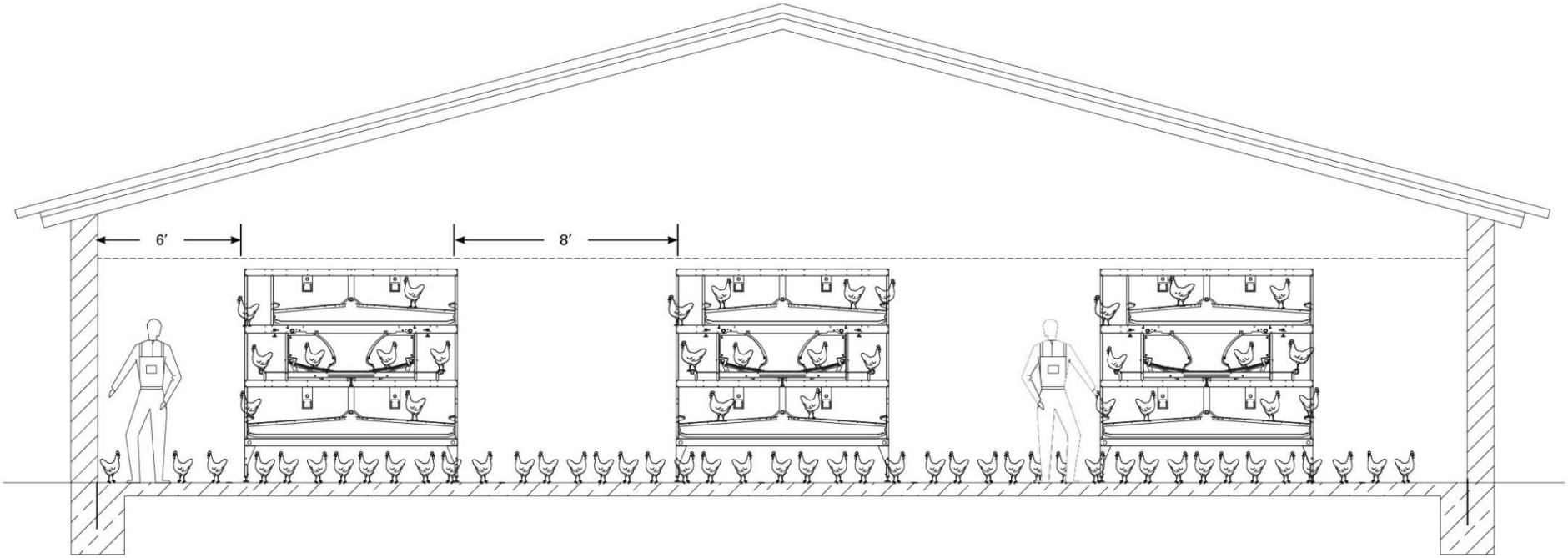
1.1.-Original Design Aviaries with Confinement – For Cage Free Certification

Assuming an objection to doors: *There will be no control of how long the birds will be confined*"

Practical Response:

- Connect opening mechanism to computer
- Computer will determine times to release flock
- Computer records the frequency and duration of opening and closing of doors.
- Door operation can be monitored remotely by certifying agency at any time

1.2-Open Systems



1.2-Open Systems (contd.)

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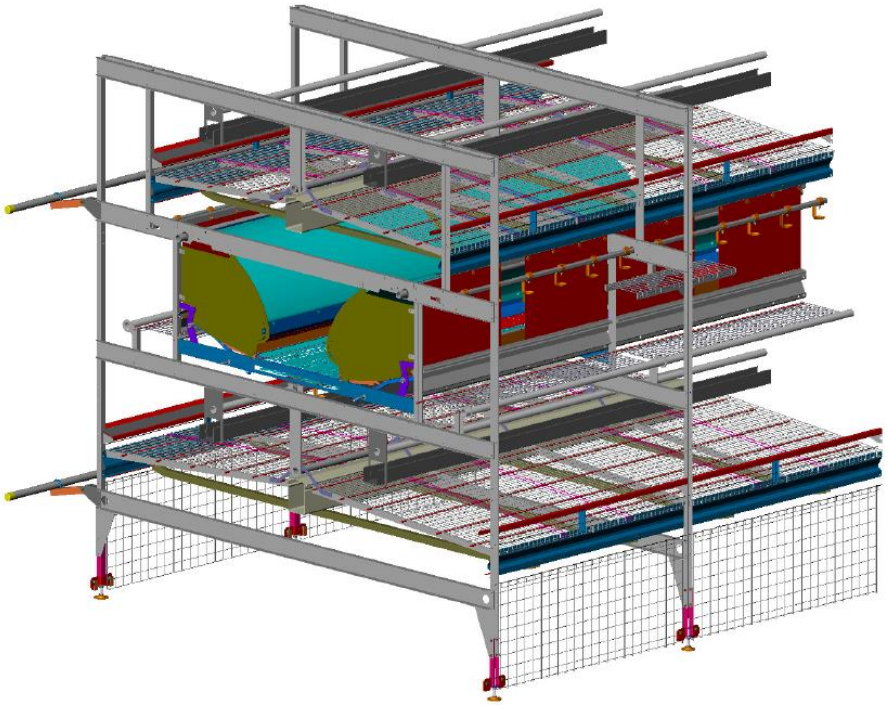
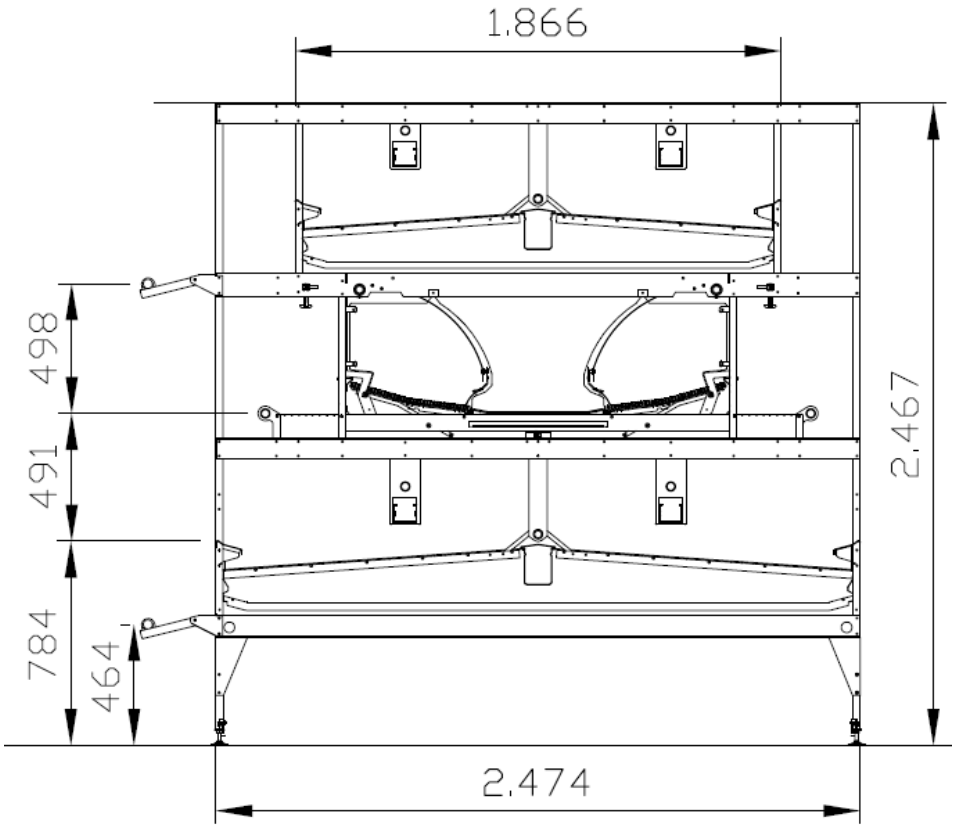




1.2-Open Systems (contd.)

Pros

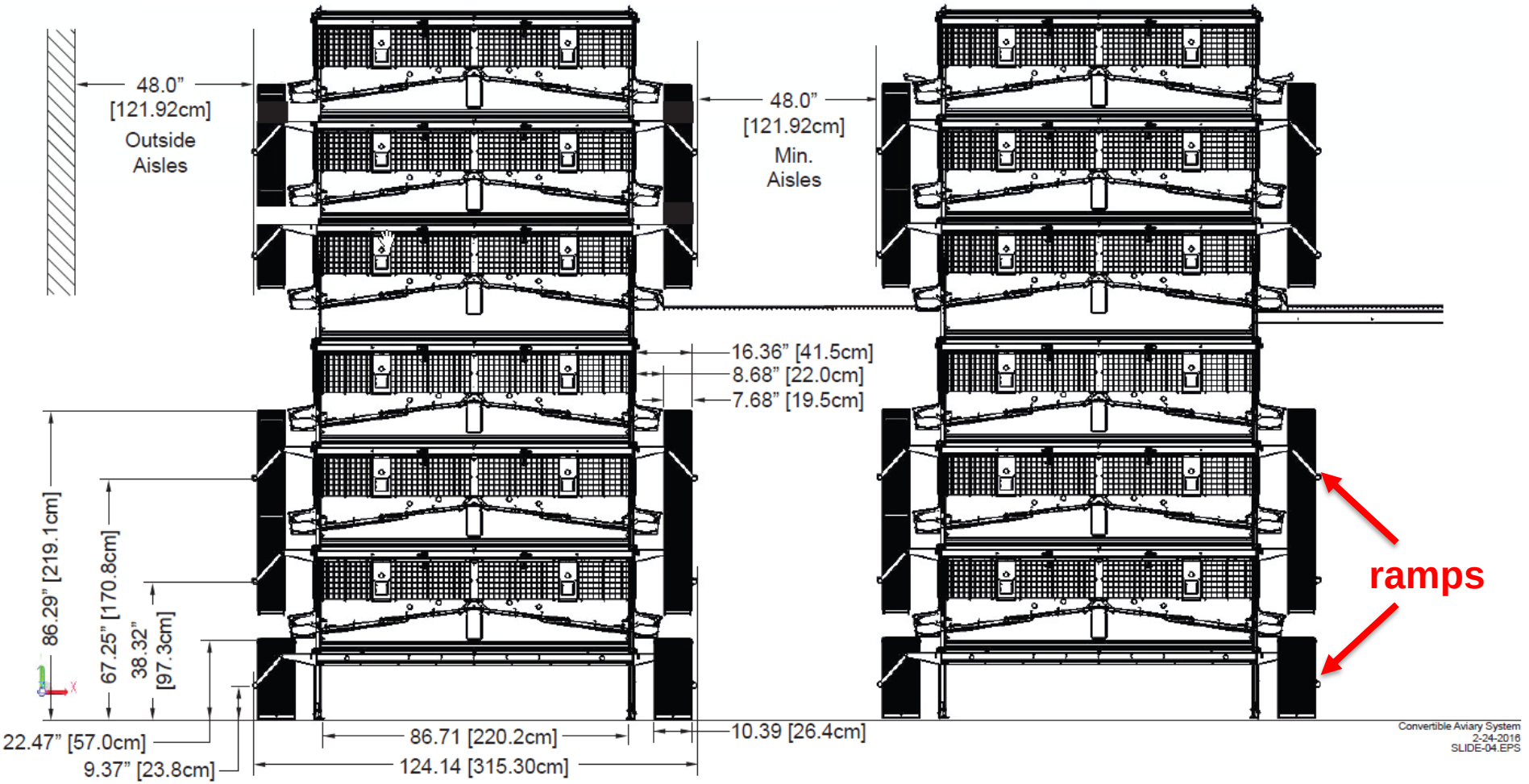
- Optimal bird movement
- True nest with protected belt
- *These features contribute to a high proportion of eggs laid in nests*
- Easiest open cage-free system to manage
- Meets all cage-free certification requirements
- Well proven design

Cons

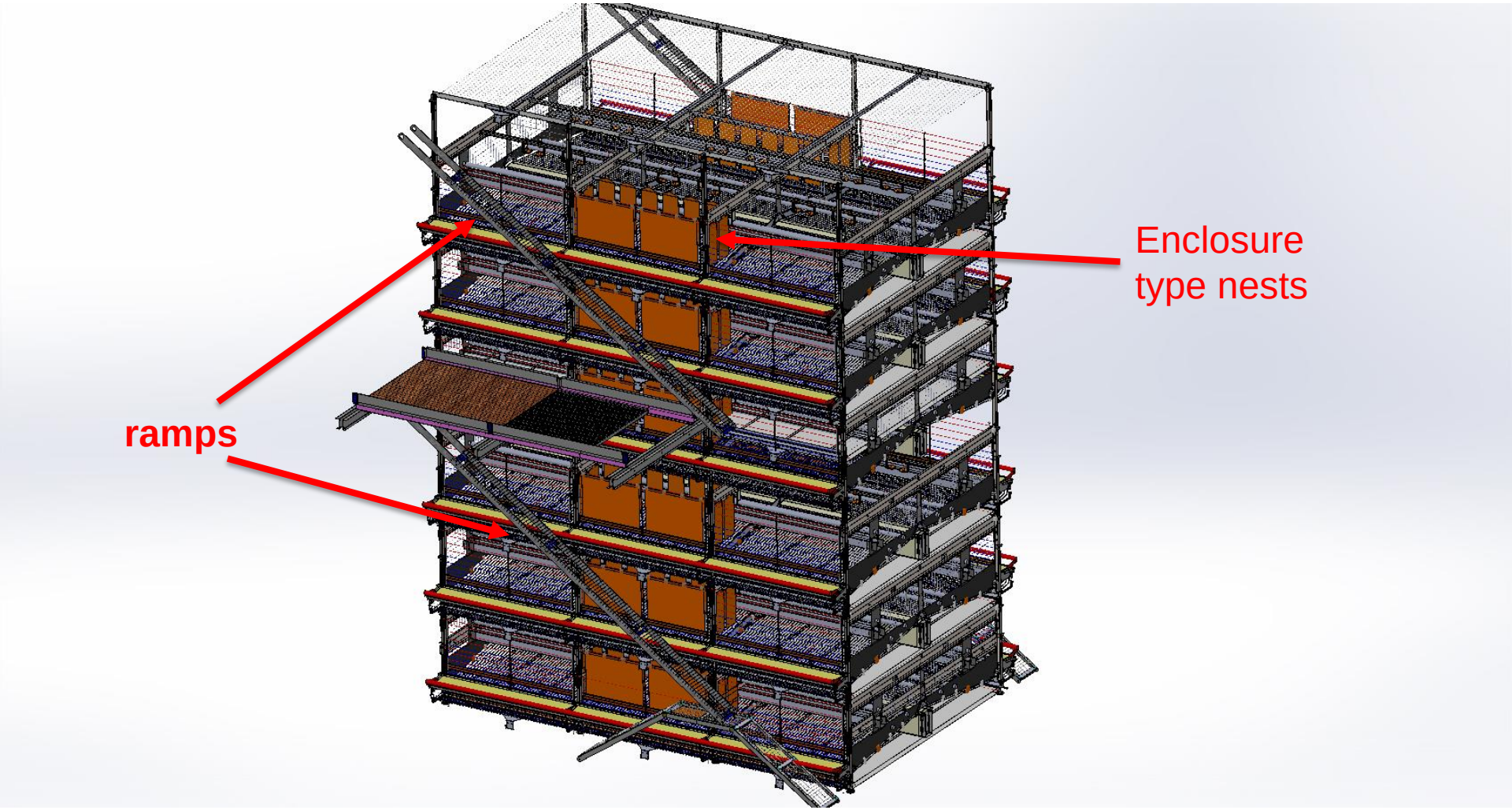
- System does not allow confinement of pullets after transfer

1.2-Open Systems (contd.)

2.0-Cage-Based Systems



2.0-Cage Based Systems



2.0-Cage-Based Systems (contd.)

Pros

- Simple design
- Potentially lower cost per hen, with regard to the total investment in the equipment and building. This is due to the area of the non-dedicated egg belts which are available to the flock.
- Cage free certification should not be a limitation.

2.0-Cage-Based Systems (contd.)

Cons

- More restricted flock movement (especially vertically) than original design
- Enclosure-type nests are less attractive to birds
- Covers over egg belts accumulate manure

These factors can result in more floor laying reducing the proportion of saleable eggs due to “dirties”

- Limited experience under commercial application compared to original design aviaries
- Potential objections from certifying agencies and customers in the future because these system too closely resemble a cage.

Many variations of cage-free systems are available.

Alternative systems may:-

- Allow for flock access underneath the system
- Incorporate a manure scraper underneath the system
- Be compatible with two or three story buildings, allowing for high density per floor area and accordingly economy in construction.
- Accommodate two- to four-tier configuration depending on the design of the house, whether new or a retrofit