

LÜCKING MONOLITHIC SYSTEM

Optimal method for laying Monolithic blocks
with precision and efficiency.



LÜCKING
ZIEGEL | BETON

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Base Course

Traditional Mortar Bed

Ensure the success of your Lücking Monolithic system by starting with a solid base course. Follow the precise guidelines for laying the blocks on a traditional sand and cement mortar bed to accommodate variations in floor height and ensure plumb and level blocks. This critical step sets the foundation for a speedy and efficient construction process

Laying the Block

Discover the optimal method for laying Lücking Monolithic blocks with precision and efficiency. Elevate your construction standards by following these essential steps:

- 1.** Begin by placing the Monolithic blocks exclusively above ground level and above the Damp Proof Course (DPC). Ensure the base course is impeccably aligned and level across both block planes, avoiding any irregularities or inconsistencies in the top surface.
- 2.** Emphasize the importance of maintaining a seamless level across the top plane of the block, rather than attempting to adjust the face of the blockwork at the base course. This fundamental step dictates the levelness of subsequent courses and significantly enhances the speed and accuracy of the construction process.

3. Utilize a string line to uphold the straightness of the wall, guaranteeing a visually appealing and structurally sound outcome. Strategically set out the blocks from fixed reference points like corners, doorways, or window openings to streamline the construction process.

4. Incorporate appropriate coursing heights within the base course, integrating any necessary cut or coursing blocks to ensure a complete block aligns at the wall's pinnacle. Place any resulting cut blocks with the cut side facing downward into the traditional mortar bed for optimal stability.

5. Allow ample time for the traditional mortar to cure and establish a robust foundation, enhancing the overall strength and durability of the structure.

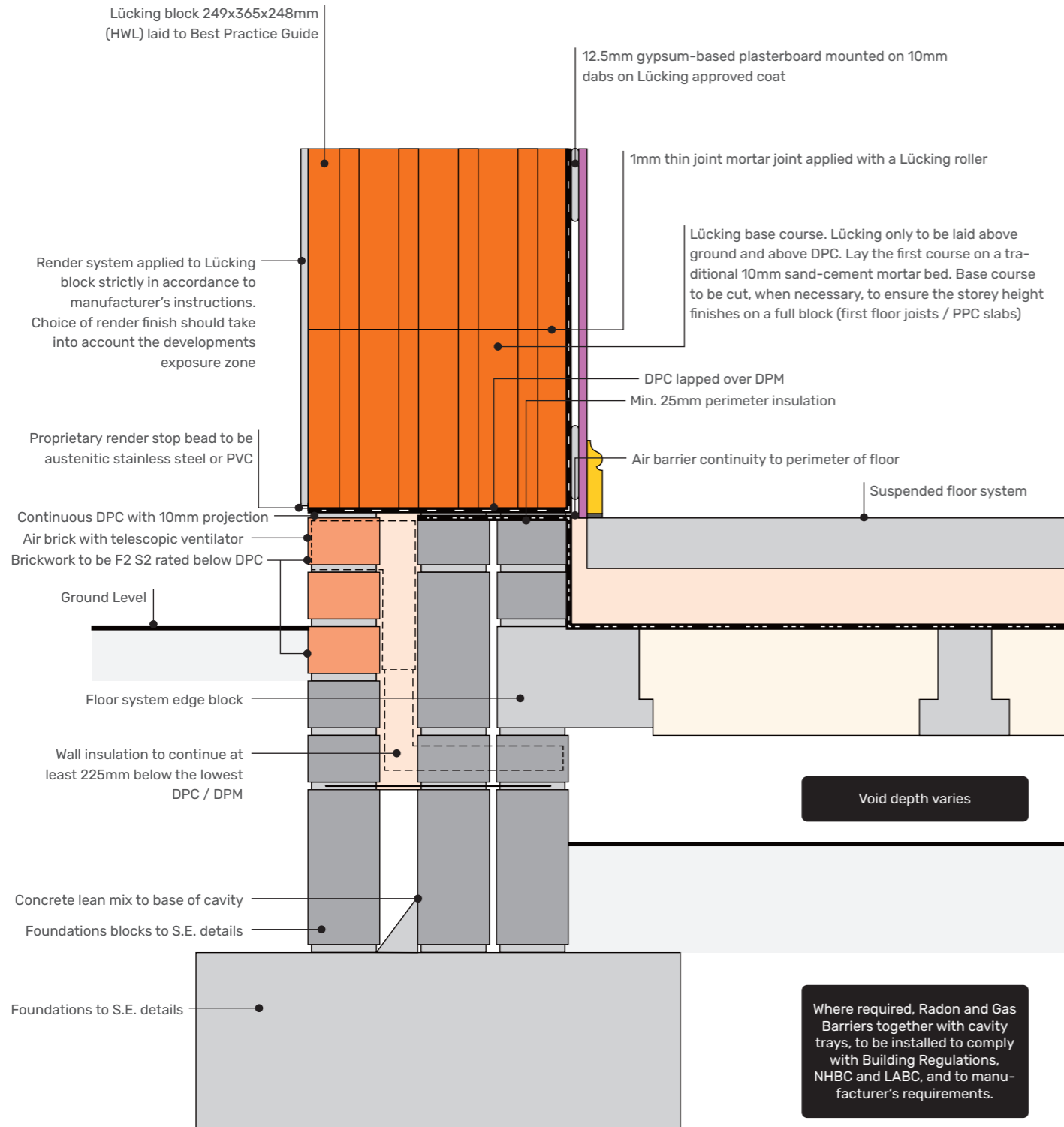
Elevate your construction projects with precision and efficiency using these expert guidelines for laying Lücking Monolithic blocks. Master the art of construction with meticulous attention to detail and adherence to best practices for a flawless end result.



BASE COURSE

365 Block To Suspended Floor

Full booklet of details available for download from www.Luecking.de



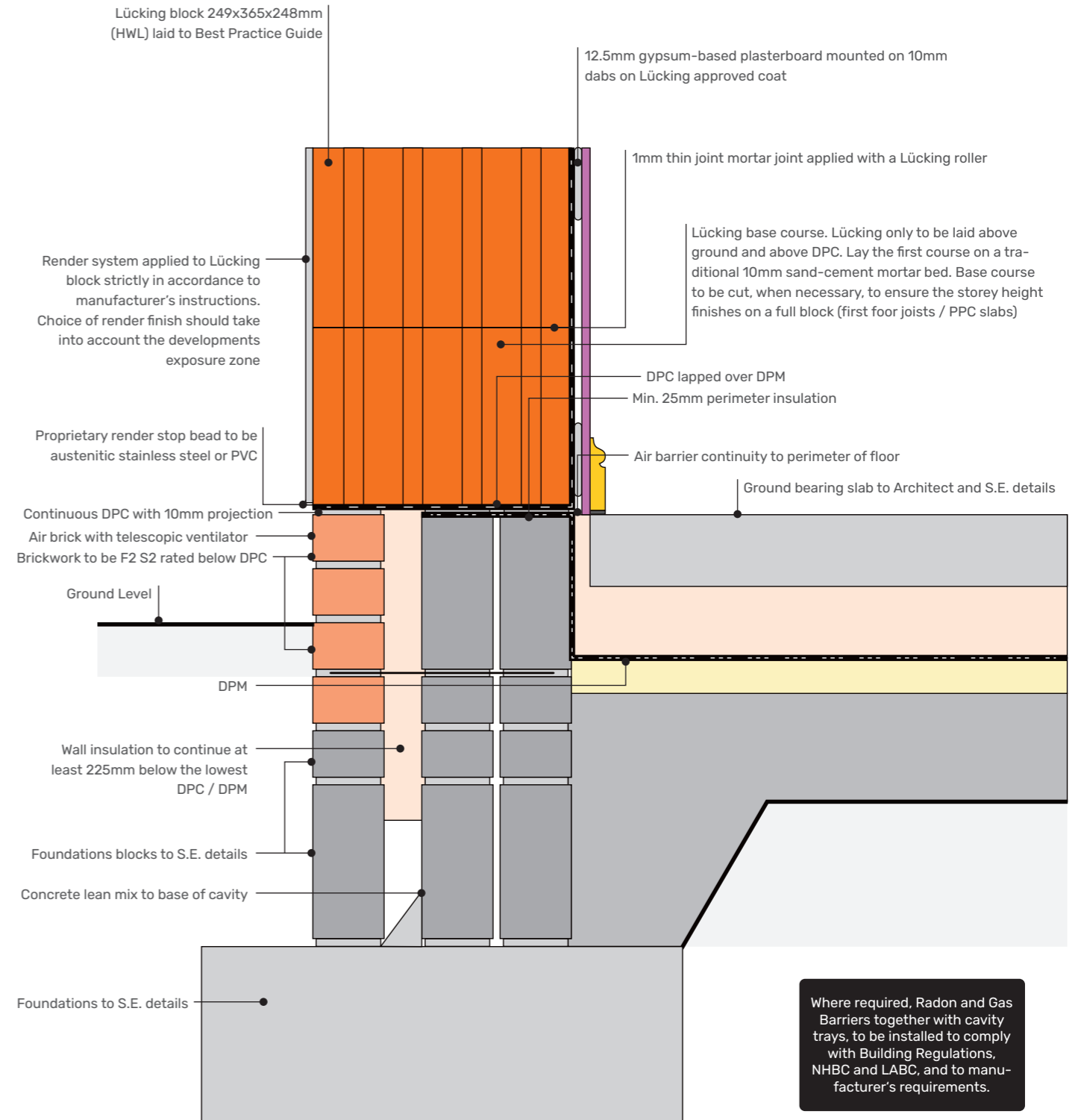
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BASE COURSE

365 Block To Ground Bearing Slab

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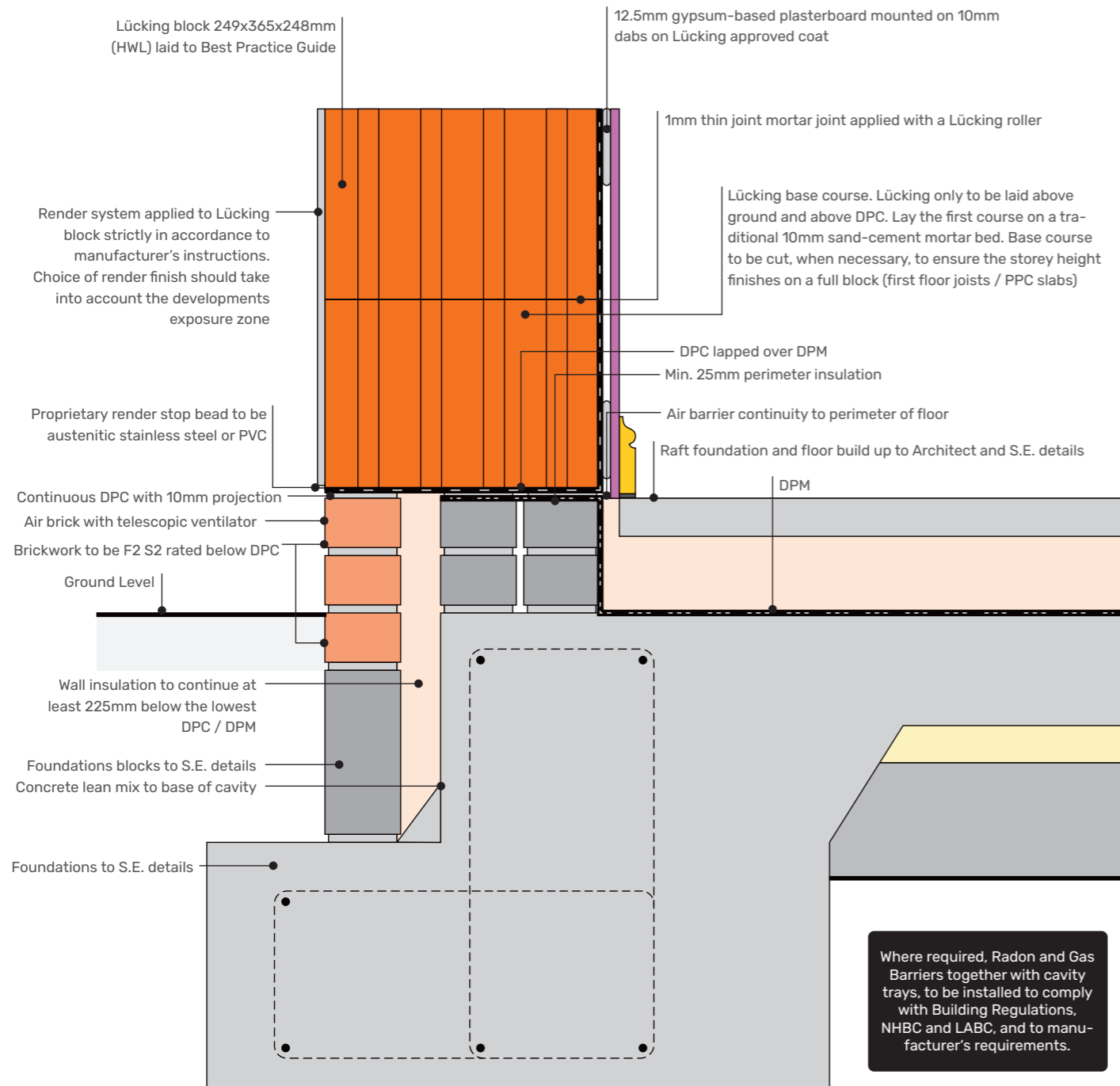
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BASE COURSE

365 Block Wall To Raft

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Mixing & Applying Thin Joint Mortar

Optimal Mortar Application Techniques for Lücking Monolithic Blocks

When it comes to the installation of Lücking Monolithic blocks, precision and efficiency are paramount. Understanding the nuances of mortar types and their application methods is crucial for achieving a seamless and durable construction. There are two primary mortar types recommended for use with Lücking Monolithic blocks: German mortar ZP99 + KMTherm.

The mortar ZP99 + KMTherm, typically provided in 25kg bags along with the blocks, serves as the standard choice for most applications.

To apply the thin joint mortar effectively, utilize a roller to achieve a uniform coverage of a 1mm bed of mortar on the blocks. The ideal consistency of the mortar mix is achieved when it forms a consistent „blanket“ on the block bed face. Following the guidelines and quantities specified on the packaging, prepare the thin joint mortar mixture. Allow approximately 5 minutes for the polymers in the mortar to activate after mixing. Subsequently, give the mortar a brief whisk with the mixer before transferring it into the roller for application.

Position the blocks on the mortar bed, maintaining alignment using a string line to ensure a straight and linear wall. It is essential to guarantee a minimum bond of 100mm over the block beneath for structural integrity. Repeat this process diligently until the entire wall is assembled.

Before laying the subsequent course, remember to brush the bed face of the laid blocks with a damp soft-bristled brush. This step is crucial for ensuring proper adhesion and alignment in the construction. Additionally, after laying each course, use a dampened brush to clear any dust and debris from the top of the blocks. This practice facilitates the smooth application of mortar and minimizes any disruptions in the subsequent courses.

By adhering to these meticulous mortar application techniques, you not only ensure the structural stability and longevity of your construction but also elevate the aesthetic quality of the finished product. Attention to detail and precision in each step of the process are key to achieving a flawless and robust Lücking Monolithic block installation.



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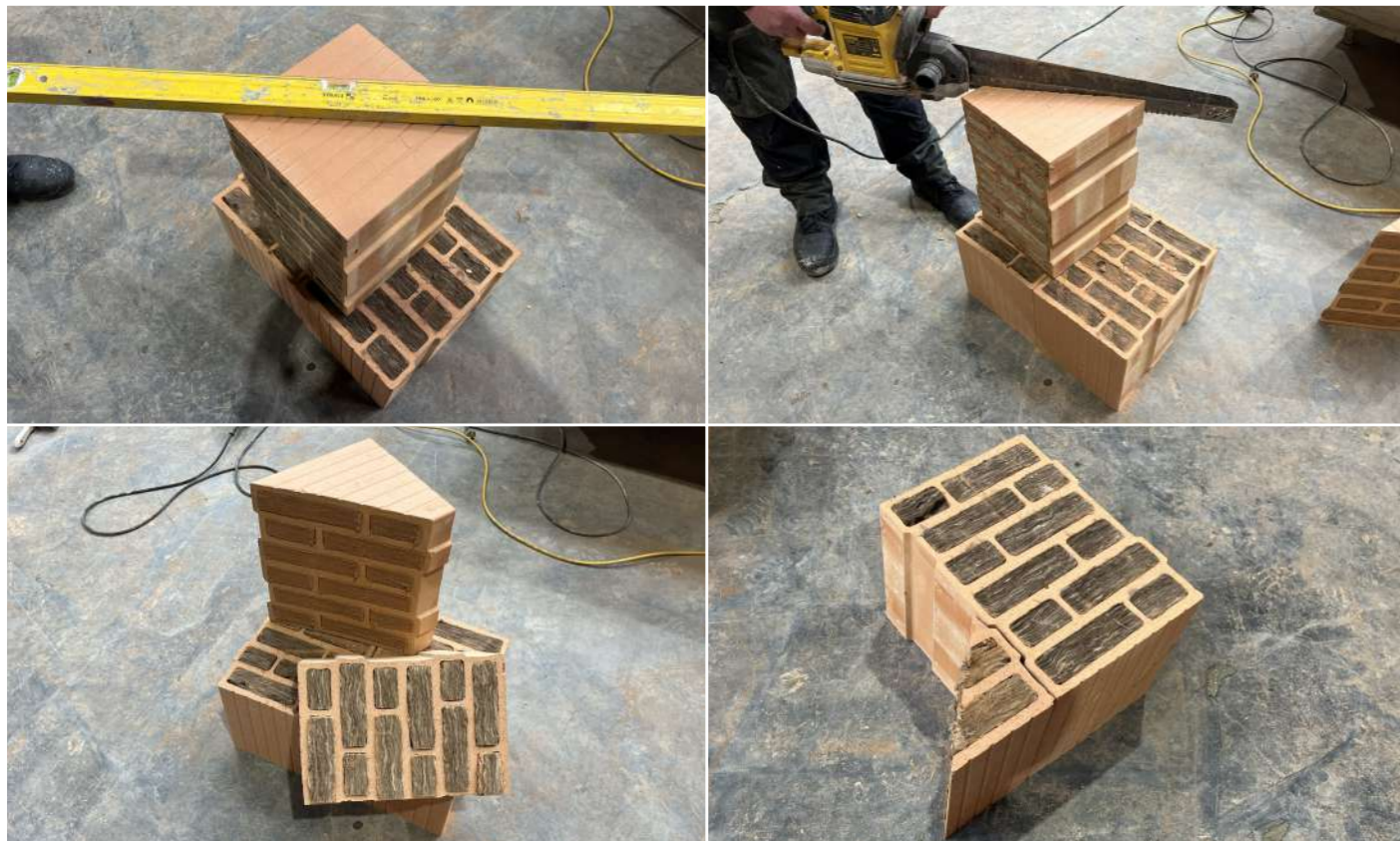
Cutting the Blocks

Alligator saws are a useful tool for cutting Lücking monolithic blocks when equipped with the appropriate blade. These saws effortlessly cut through Lücking blocks with minimal dust production. For large quantities or repetitive cuts, wet bench saws can be utilized on site. Paddle mixers are handy for mixing mortar on location for block laying. It is important to wear a dust mask and eye protection while cutting, even though the blade directs the dust downwards. To further minimize airborne dust, lightly wetting the blocks before cutting is recommended. Filled Lücking bricks can be cut either wet or dry. The angle can be cut on the single block as depicted below. The chamfer can alternatively be cut off after the reveals have been formed with an alligator saw. Defects on the cutting surface (open webs) are closed with traditional mortar or Lücking KMTherm.



Gable Cuts

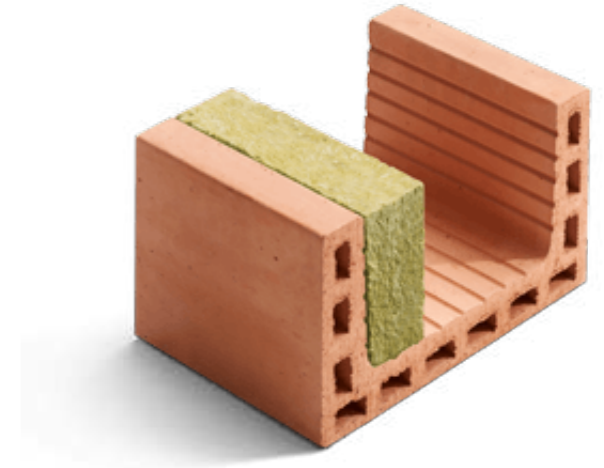
The gable wall angle is marked 20mm below the expected cut line. Once the gable blocks are in place, they are topped with approximately 20mm of standard mortar.



Lintels

Thermally Broken Lintels

A diverse selection of internal and external lintels, including thermally broken lintels, are offered for use with the Lücking Monolithic system. The Lücking Monolithic thermally broken lintels are prefabricated with concrete and steel reinforcement to fit specific structural openings in increments of 250mm, up to a maximum of 3m. These lintels feature an insulated core that acts as a thermal break. As composite lintels, they need to be supported at a maximum of 1200mm intervals until at least 2 courses of blockwork are laid above them and the mortar has had time to set.



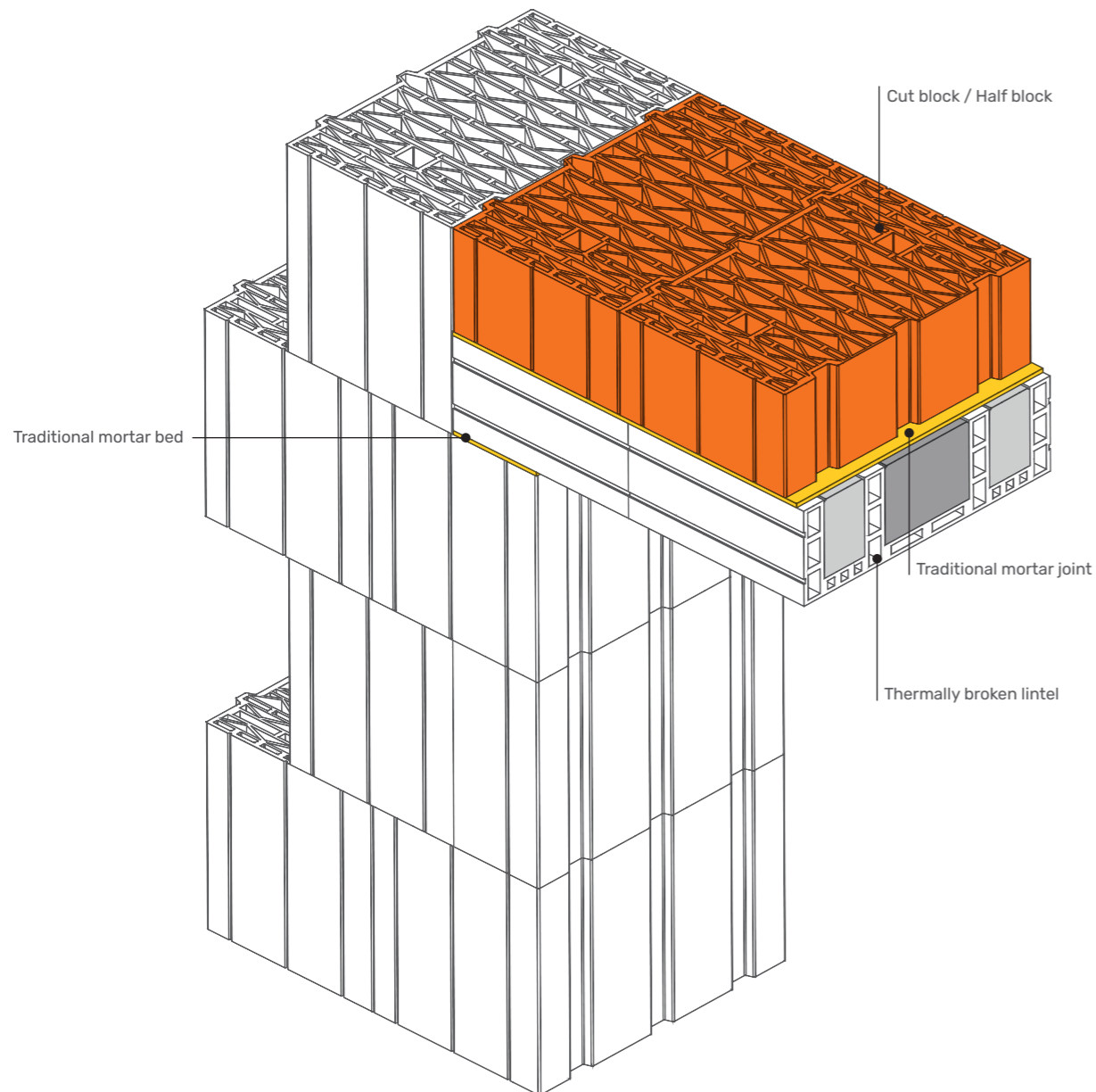
Lintels

Installation

In construction, the use of thin joint mortar to bed DPC under the lintel bearing is crucial. The lintel profiles should be bedded on two separate beds of traditional mortar with an air gap in between them. This method is employed to prevent the mortar bed from creating a cold thermal bridge across the wall.

When laying cut blocks over lintels, it is important to ensure they are placed on a bed of traditional mortar with the cut side down. Additionally, the blocks should be aligned and leveled across both planes with no steps or staggers on top. Alternatively, Lücking Half Blocks can be utilized over the lintel to reduce the need for on-site cutting.

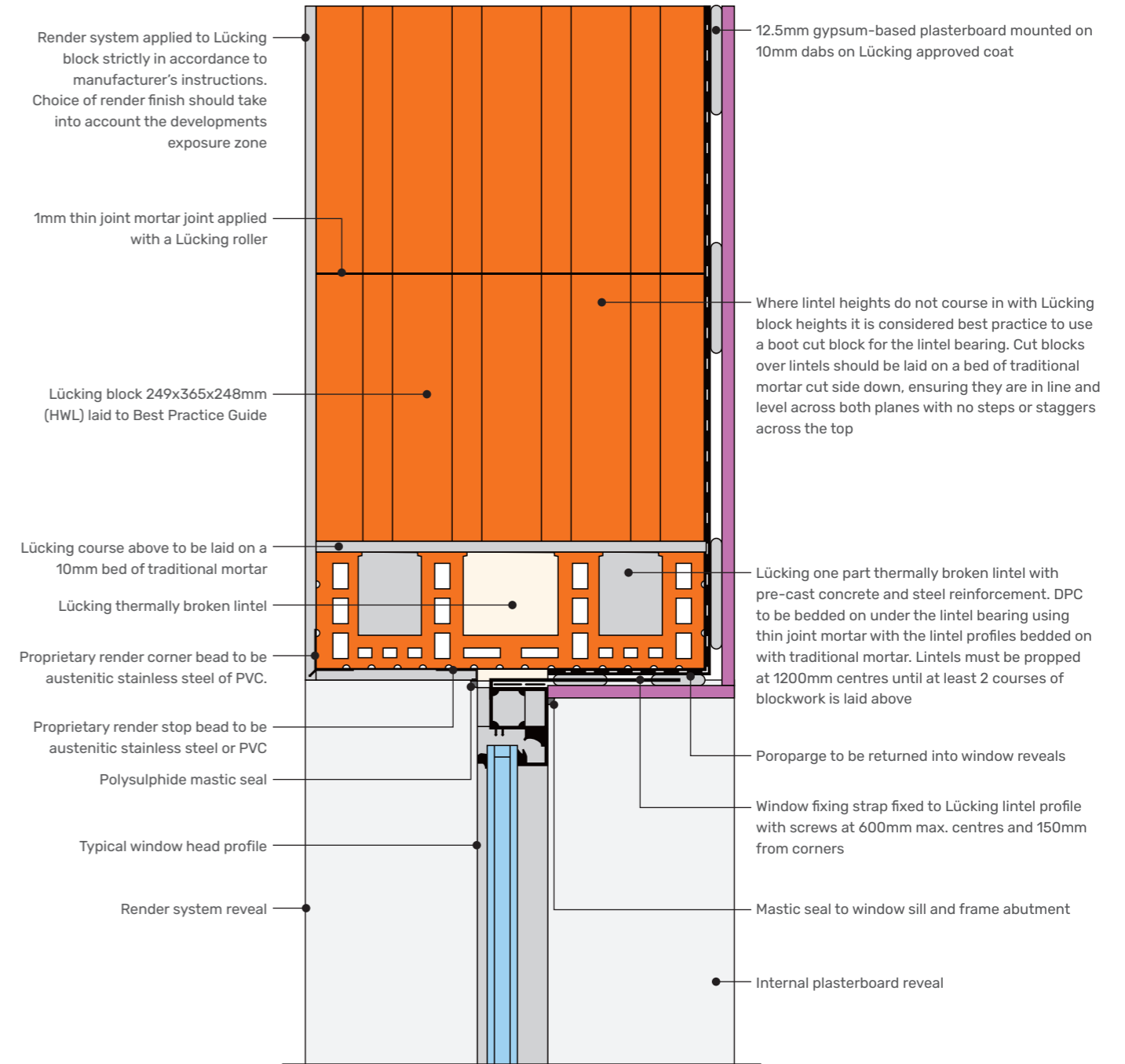
Lintels must be propped at a maximum of 1200mm centers until at least 2 courses of blockwork are laid above. It is also essential to provide a minimum of 150mm bearing at each side of the opening for lintels, unless otherwise specified by the project engineer. Adhering to these guidelines will ensure the structural integrity and thermal efficiency of the construction project.



LINTELS

Typical Detail - 365 Block To Thermally Broken Lintel

Full booklet of details available for download from www.Luecking.de



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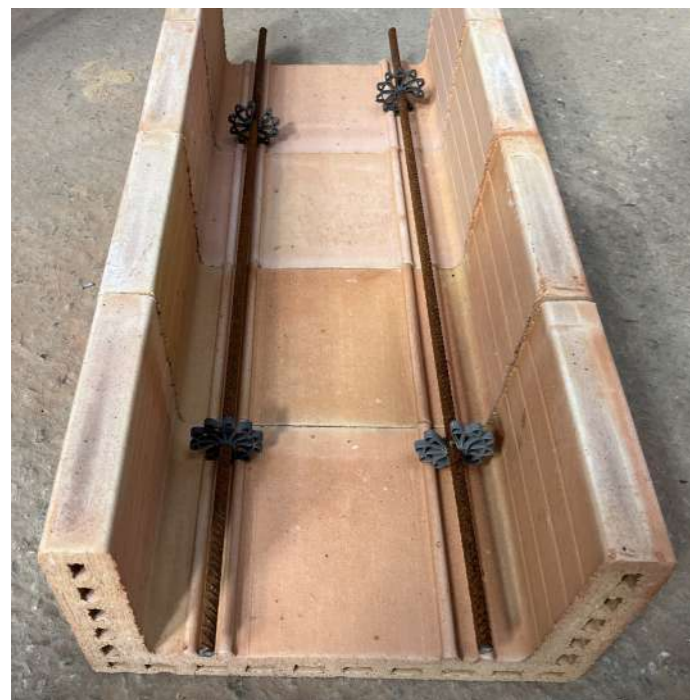
Lintels

U Schale

For larger openings, lintels can be created on site using our U Schale system. This involves using a U-shaped clay former that is placed on a temporary timber former over the opening and on the bearings at each side. The ends of the U Schale should be connected using a small amount of thin joint mortar. Reinforcing steel and spacers are then inserted into the channel according to your engineer's specifications, and the channel is filled with concrete to create the lintel over the opening.

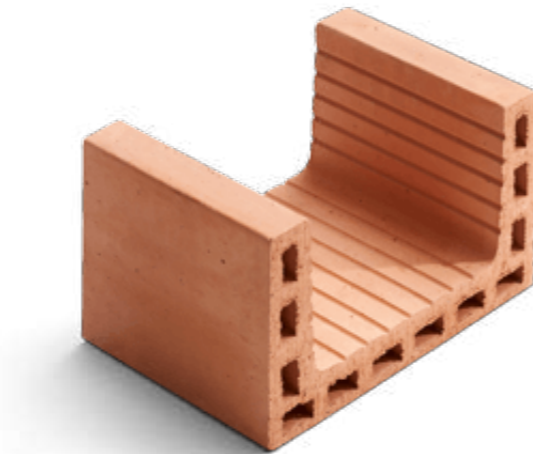
The horizontal timber formwork must be strong enough to support the weight of the U Schale with concrete and steel, and should be temporarily propped up by supports no more

than 1200mm apart. These supports should remain in place until the concrete has set and two courses of blockwork have been built above, allowing the mortar to cure.



Alternatively, lintels using U Schale can be assembled on the floor and lifted into place mechanically once the concrete has set. Timber props will still be necessary at no more than 1200mm intervals until two courses of blockwork have been built above and the mortar has cured.

U Schale can also be utilized to create a ring beam.

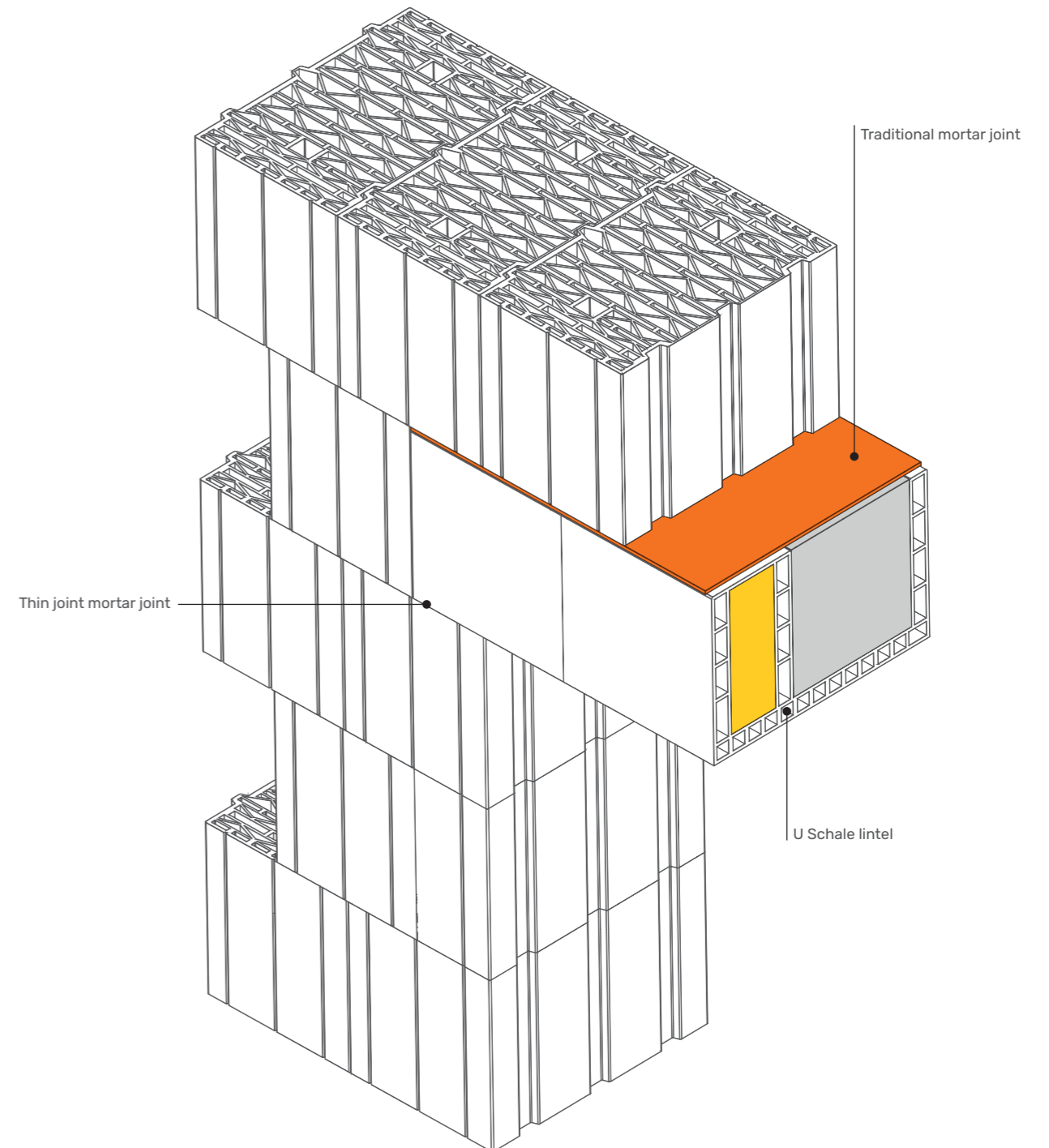


Lintels

Installation

The U Schale lintel profile is placed on the block bearing with thin joint mortar. When laying monolithic blocks over the U Schale, it is important to use traditional mortar to ensure they are level and aligned properly. Any cuts should be positioned

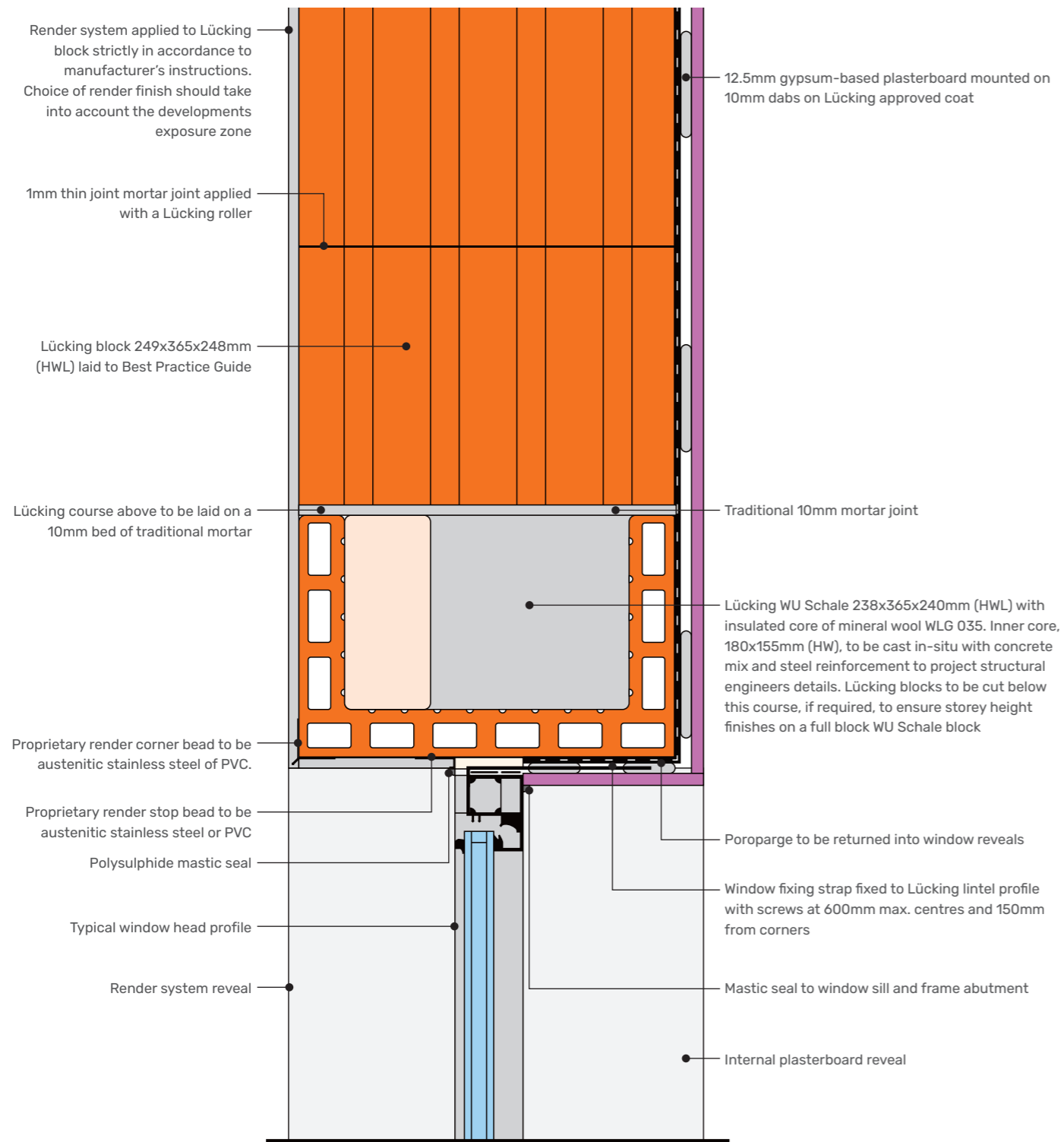
with the cut side facing down in the mortar bed to maintain a smooth surface. It is essential to avoid any steps or inconsistencies across the top of the blocks for a seamless finish.



LINTELS

Typical Detail - 365 Block To WU-Schale

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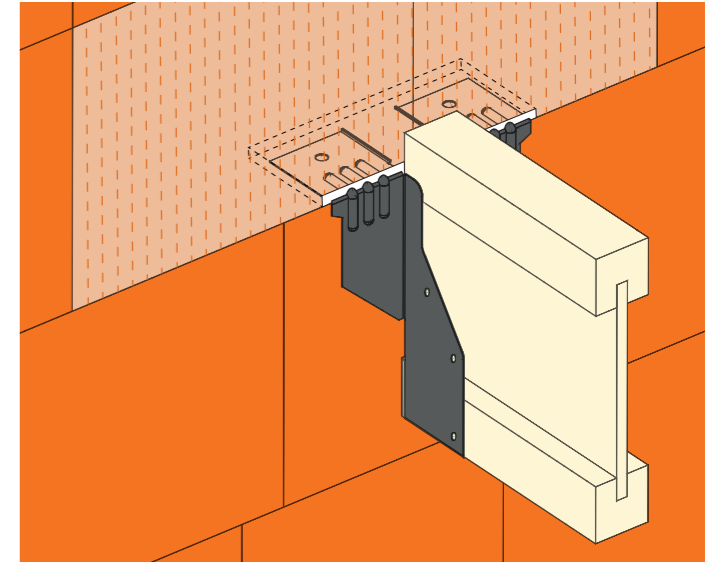
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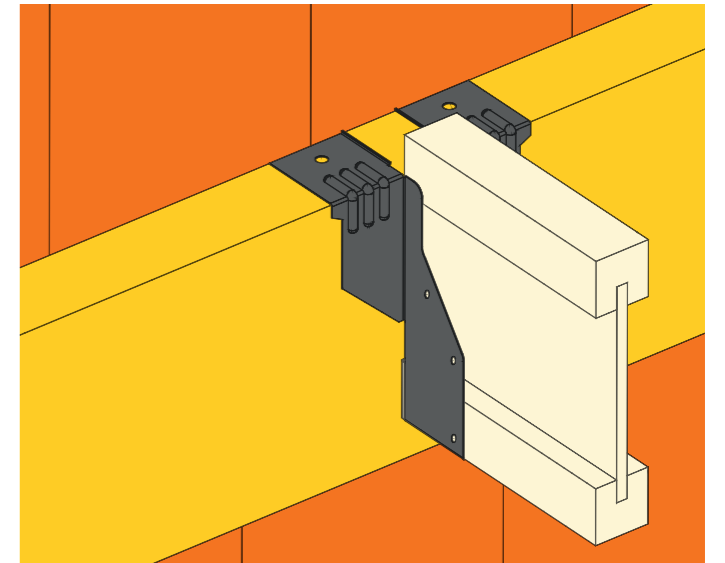
Intermediate Floor

Timber Joists

When installing hangers, it is important to ensure that the back flange is securely against the Lücking Monolithic block. Hangers should be bedded using a traditional 10mm mortar joint. Another option is to notch the block above the joist hanger, making sure that the notch is completely filled with traditional mortar to allow for thin jointing to continue. It is recommended to consult the hanger manufacturer's guidelines when installing joist hangers before applying any load.



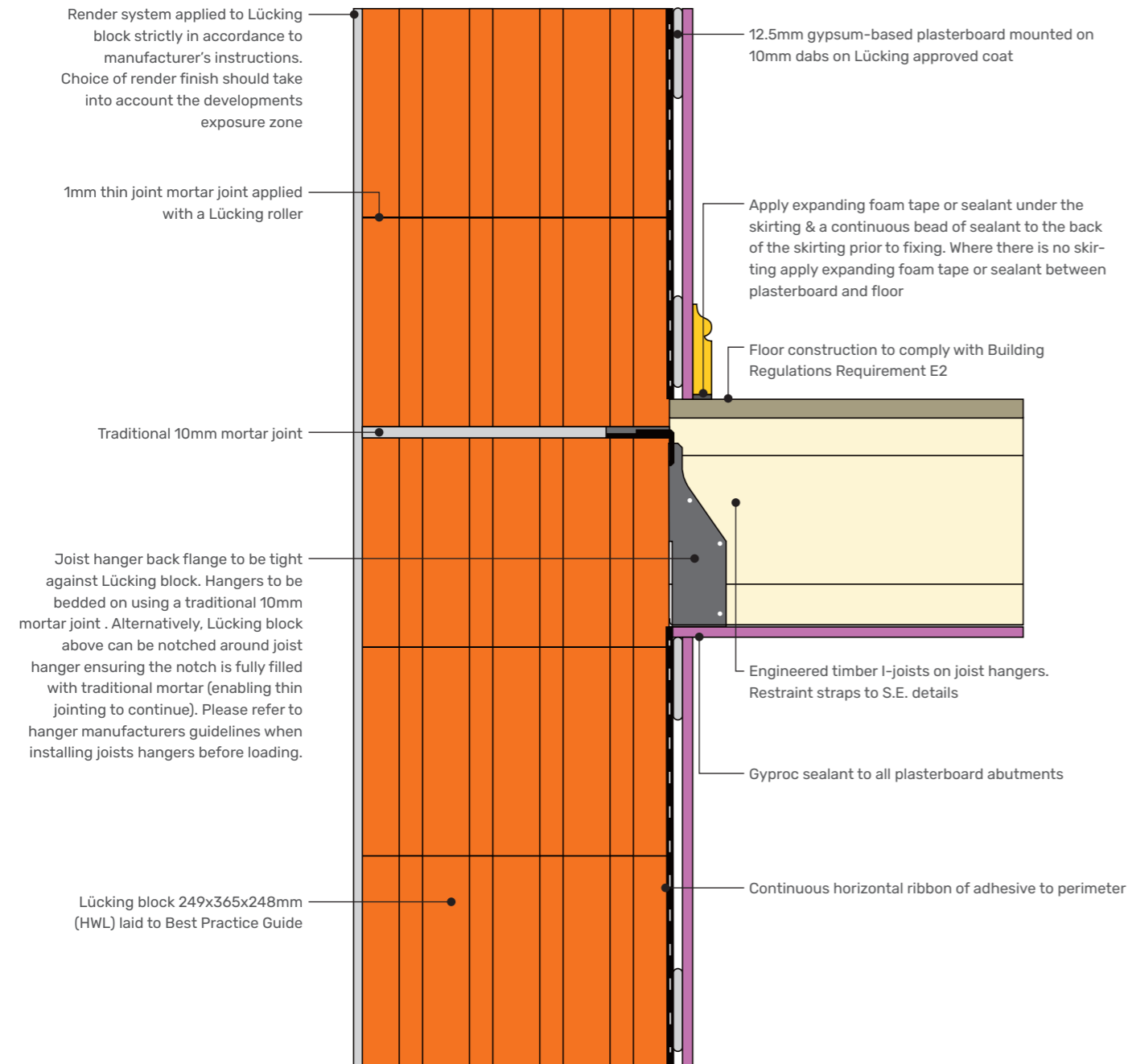
An alternative approach is to attach a timber pole plate to the Lücking Monolithic block using recommended fixings provided by the project's structural engineer. Refer to the fixings section for additional details. Additionally, make sure the joist hanger back flange is securely against the timber wall plate. The hangers should be fastened to the wall plate as directed by the project's structural engineer. It is important to follow the hanger manufacturer's guidelines when installing joist hangers before applying any load.



INTERMEDIATE FLOOR

Typical Detail - 365 Block To Timber I Joists On Hangers

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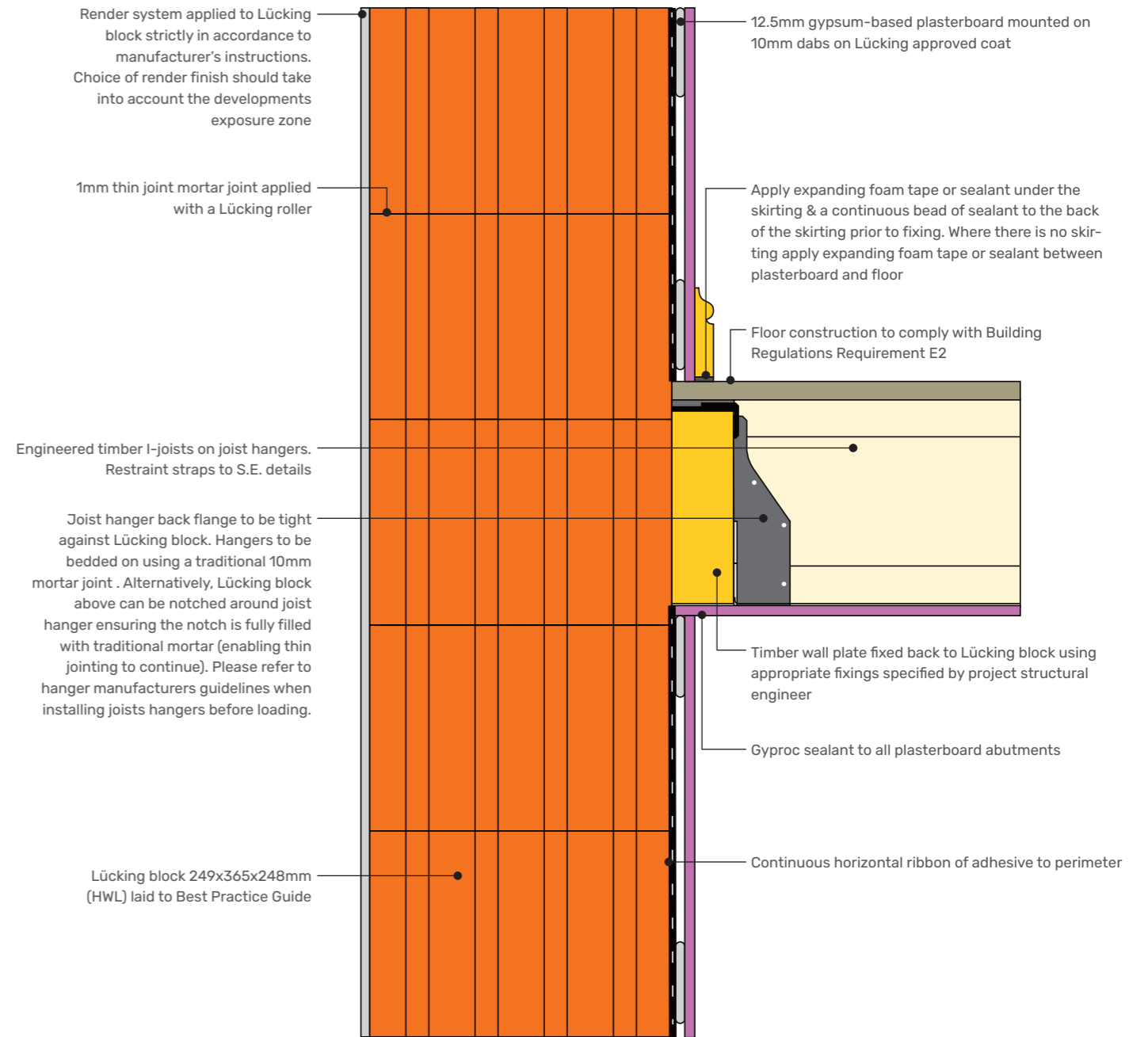


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INTERMEDIATE FLOOR

Typical Detail - 365 Block To Timber I Joists On Pole Plate

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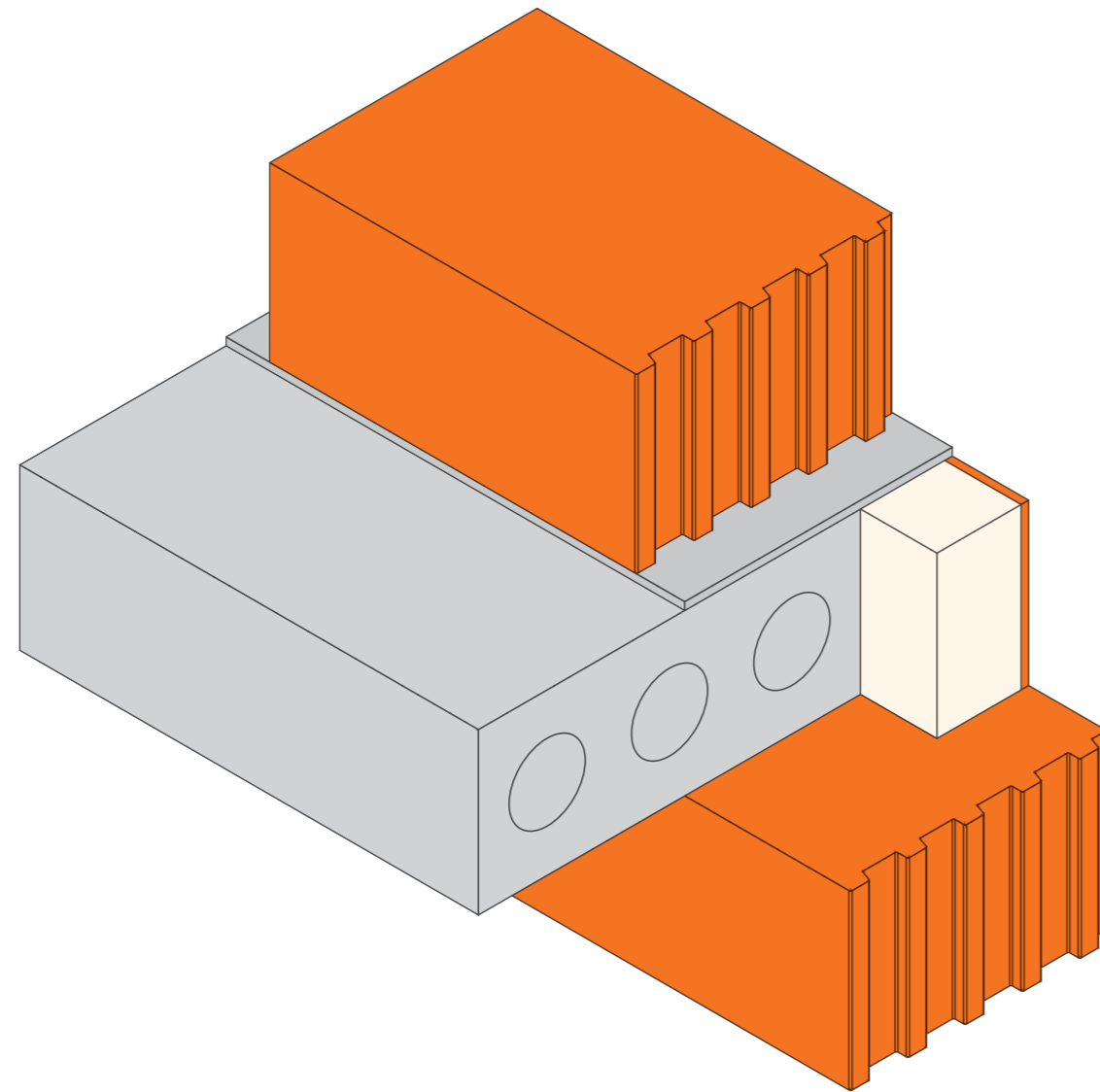
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Intermediate Floor

Concrete Planks

All precast concrete floor planks must be installed in strict accordance with the guidelines outlined in the endorsed Guidance Document by the Precast Flooring Federation. Lücking DRS edge blocks are utilized to establish a thermal break, with various sizes available to accommodate different floor slab depths. These blocks consist of a 15mm shell facing combined with 105mm Neopor Cadence sound insulation for superior thermal performance and to allow for ceiling movements. The DRS block is laid on a thin joint mortar for proper installation.

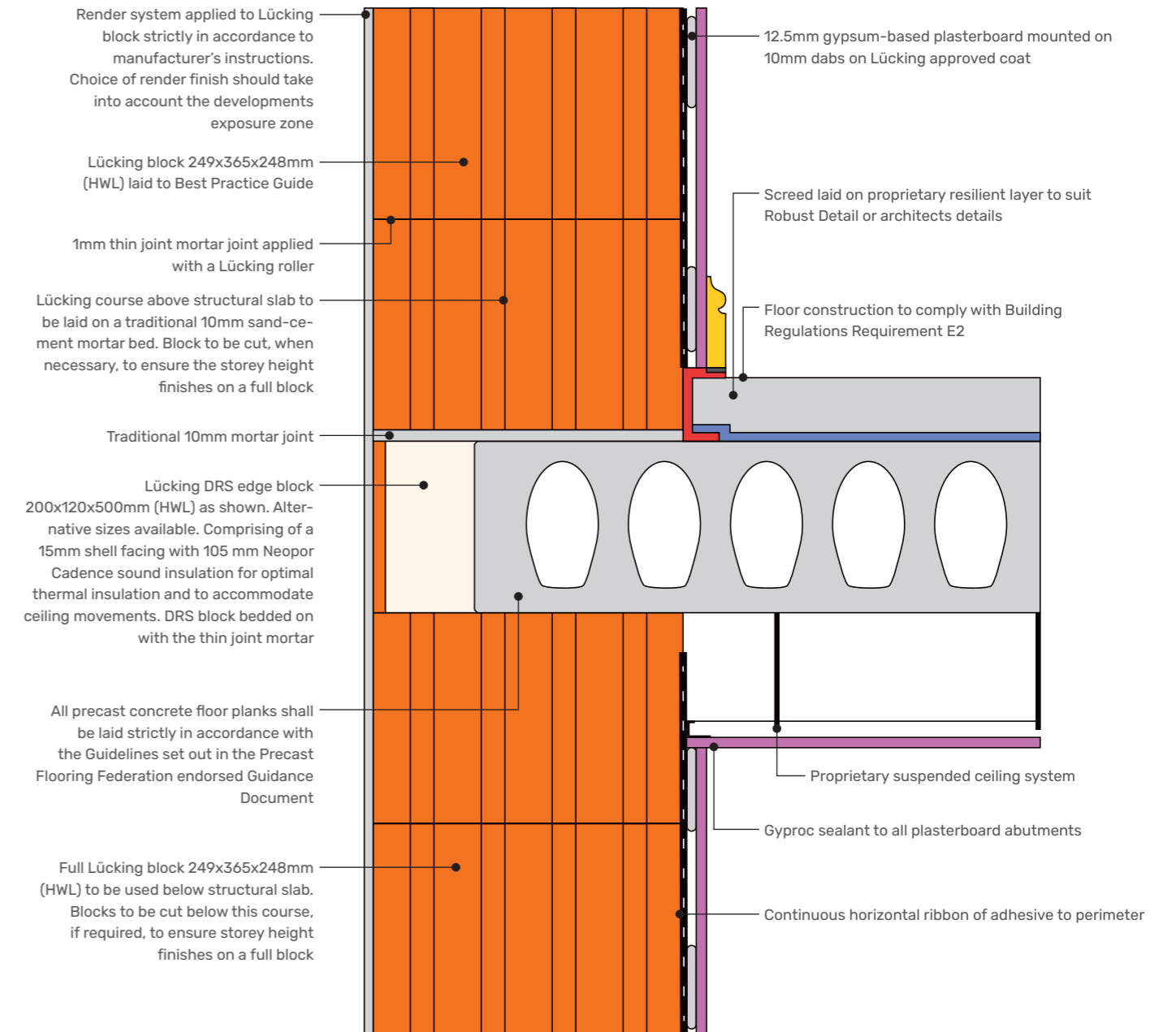
Additionally, the Lücking course above the structural slab should be placed on a traditional 10mm sand-cement mortar bed. When necessary, blocks should be cut to ensure that the storey height ends on a complete block, with the cut side facing down into the mortar joint for proper alignment.



INTERMEDIATE FLOOR

Typical Detail - 365 Block To Precast Concrete Floor

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Fixings

When installing into Lücking Monolithic blocks, it is important to use fixings that are suitable for multi cellular clay blocks/ vertically perforated brick. For more information on appropriate fixings, please consult your fixing supplier.

If heavy duty fixings are needed, it is recommended to seek technical guidance from the fixing manufacturer. When drilling into Lücking Monolithic blocks, a traditional masonry bit can be used without the need for percussion or hammer action. Drilling with a rotary setting and masonry bit is sufficient to achieve the desired results.



Chasing for Services

Chases

When installing chases for running services, it is recommended to use a specialized tool such as a wall chaser with diamond-tipped cutting wheels. After cutting the chase, a bolster chisel can be used to remove the excess material. To ensure air tightness, the chase should be sealed with Lücking Porofill. Contractors must adhere to guidelines to ensure the safe installation of electrical cables, with new circuit work potentially falling under Part P of building regulations. It is advisable to complete chasing and making good work before applying a parge coat, but if done afterwards, an additional coat must be applied over the chased area.



Chasing for Services

Sizes of vertical chases and recesses in masonry, allowed without calculation.

Thickness of wall (mm)	Chases and recesses formed after the construction of masonry		Chases and recesses formed during the construction of masonry	
	Max depth (mm)	Max width (mm)	Minimum wall leaf thickness remaining (mm)	Max width (mm)
85-115	30	100	70	300
116-175	30	125	90	300
176-225	30	150	140	300
226-300	30	175	175	300
>300	30	200	215	300

In architectural construction, it is imperative to adhere to specific guidelines regarding the dimensions and placement of recesses and chases within walls. These guidelines serve not only to ensure structural integrity but also to maintain aesthetic harmony within the built environment.

Note 1 emphasizes the importance of determining the maximum depth of a recess or chase, which should account for any holes created during its formation. This consideration is crucial in guaranteeing that the final dimensions align with the intended design specifications.

Note 2 provides parameters for vertical chases, stipulating that those not exceeding one-third of the storey height above floor level may have a depth of up to 80mm and a width of up to 120mm, provided the wall thickness is 225mm or more. These dimensions are essential in balancing functionality with architectural coherence.

Note 3 addresses the horizontal distance between adjacent chases or between a chase and a recess or opening, mandating a minimum spacing of 225mm. This requirement aims to prevent overcrowding and facilitate ease of access for maintenance or installation purposes.

Note 4 underscores the significance of spacing between recesses or between a recess and an opening, specifying that the horizontal distance should be at least twice the width of the wider feature. This guideline ensures proper visual balance and prevents the clustering of architectural elements.

By meticulously following these notes, architects and builders can uphold the principles of both structural soundness and design aesthetics in their construction projects. Adherence to these guidelines is essential for creating spaces that are not only functional but also visually appealing.

Note 5
The cumulative width of vertical chases and recesses should not exceed 0.13 times the length of the wall.

Note 6
When installing gas pipework into chases cut into Porotherm blocks, it is important to secure the pipework using proprietary side fixed clips on the face of the block, rather than the inner face of the chase. Proper sealing of the chase in accordance with Gas Safe regulations is essential for all masonry types. If there is any uncertainty, it is advisable to seek the advice of a heating engineer.

Chases that are too deep or back-to-back can compromise the structural integrity of the wall, necessitating a structural engineer's survey and report. It is important to note that the individual responsible for creating chases for electrical work may not be the same person who hangs a picture or installs a window. Therefore, chases should be strategically placed to allow for easy access to services in relation to lights, switches, sockets, and appliance points for all involved parties.

Notes

Blocks for a healthy world.

August Lücking GmbH & Co. KG

Eggestraße 2
34414 Warburg-Bonenburg

Fon +49 5642 60 07 0
Fax +49 5642 60 07 22

www.luecking.de

