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PREAH NOKOR
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លេខ ២, ឆ្នាំ២០២០ / Number 2, 2020 / Numéro 2, 2020

អាជ្ញាធរជាតិអប្សរា
APSARA

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សៀមរាប / Siem Reap

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អាជ្ញាធរជាតិអប្សរ

APSARA National Authority

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ជំនឿ និងការប្រែតិបត្តិដែលពុំចេះដាច់ដោអង្គរ៖ តាមរយៈកំណាយបុរាណវិទ្យាដោបជ្ជាយក្តី

ញឹម សុជាវិទ្ធ* Marui Masako** និង Miyamoto Yasuharu***

សេចក្តីផ្តើម

បន្ទាយក្តីមានទីតាំងនៅជាប់នឹងភូមិស្រះស្រង៉និងភូមិរហាល ហើយជាប់ជ្រុងទិស អាគ្នេយ៍នៃបន្ទាយតាព្រហ្ម (រូបលេខ១ និង២)។ គ្មានសិលាចារឹកណាមួយបញ្ជាក់ច្បាស់អំពីកាលបរិច្ឆេទនៃការសាងសង់បន្ទាយក្តីឡើយ។ លោក Philippe Stern ដែលបានសិក្សាអំពីសិល្បៈនៃរចនាបថបាយ័ន្តយល់ថា ប្រាសាទនេះមានរចនាបថសិល្បៈ ដូចប្រាសាទបាយ័ន្ត គឺស្ថិតនៅក្នុងវាជ្យរបស់ព្រះបាទជ័យវរ្ម័នទី៧ (គ.ស. ១១៨១ ដល់ ប្រ. ១២១៨) និងសាងឡើងដើម្បីឧទ្ទិសដល់ព្រះពុទ្ធសាសនាមហាយាន។[9] លើសពីនេះ យោងតាមក្បាច់ចម្ងាក់ និងសិលាចារឹកខ្វីៗនៅតាមមេទ្វារនៃប្រាសាទនេះ ពោលគឺមានលក្ខណៈដូចគ្នានឹងប្រាសាទព្រះពុទ្ធសាសនាមហាយានផ្សេងទៀតនៅក្នុងវាជ្យនេះដែរ។

តាមសិលាចារឹកស្តុកកក់ធំ (K. 235) បានចារថាពេលដែលព្រះបាទជ័យវរ្ម័នទី២ ឡើងគ្រងរាជ្យនៅដើមសតវត្សរ៍ (ស.វ.) ទី៩ ហើយបន្ទាប់ពីបង្រួបបង្រួមទឹកដីឲ្យស្ថិតនៅក្រោមអំណាចតែមួយមក ព្រះអង្គមានយុទ្ធនាការរៀបចំភូមិស្រុកនានា។ ព្រះអង្គបានចាត់ឲ្យគ្រួសារផ្សេងៗទៅតាំងទីនៅដីថ្មី ដើម្បីបង្កើតជាភូមិស្រុក ហើយតែងតែឲ្យសាងទីគោរពបូជានៅជាប់ជាមួយជានិច្ច។ ក្នុងចំណោមភូមិស្រុកទាំងនោះ អ្នកស្រាវជ្រាវយល់ថានៅមុំបន្ទាយក្តីនេះ ក៏បានរៀបចំភូមិមួយដែរ ដែលមានឈ្មោះថា "កុតិ"។ ពាក្យ "កុតិ" ឬ "កុដិ" នេះ ជាភាសាសំស្ក្រឹត ហើយនៅក្នុងភាសាខ្មែរសម័យថ្មី ក៏នៅតែប្រើ "កុដិ" ដែរ និងក្លាយមកជា "ក្តី"។[10] ពាក្យនេះដែរ យើងយល់ថា

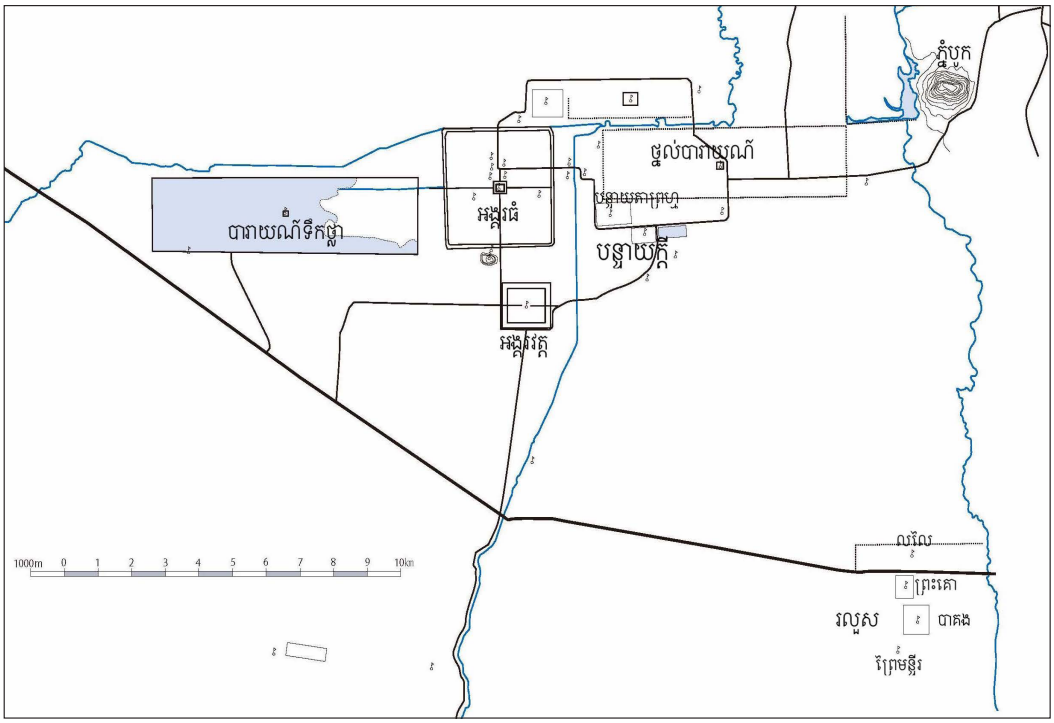
** អ្នកស្រាវជ្រាវនៅមជ្ឈមណ្ឌលអាស៊ីសិក្សាស្រាវជ្រាវនិងបណ្តុះបណ្តាលធនធានមនុស្ស នៃសាកលវិទ្យាល័យសូហ៊ីយ៉ា*

*** សាស្ត្រាចារ្យនៃសាកលវិទ្យាល័យសូហ៊ីយ៉ា*

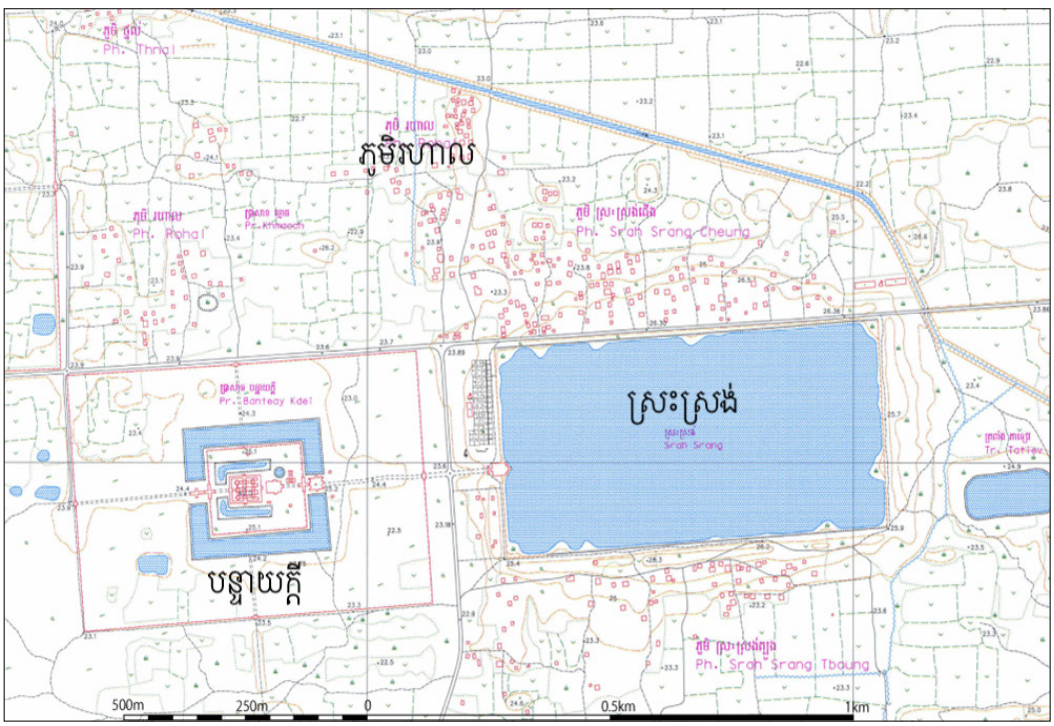
**** ប្រធានអភិរក្សនៃក្រុមប្រឹក្សាអប់រំរបស់ក្រុងអូសាកា*

[9] Stern 1927, 1965។

[10] *អាំង ជូលាន ២០១៣: ៦១-៥០។ ទាក់ទងនឹងពាក្យ "កុដិ" និង "ក្តី" សូមអាន អាំង ជូលាន ២០១៤: ១១៤- ១២០។*



រូបលេខ១. ទីតាំងបន្ទាយក្តី



រូបលេខ២. ទីតាំងបន្ទាយក្តី (ផែនទី, JICA និង អាជ្ញាធរអប្សរា)

ជាឈ្មោះរបស់ "បន្ទាយក្តី" សព្វថ្ងៃ។[៣] ទីតាំងនៅម្តុំបន្ទាយក្តីនេះ នៅសតវត្សក្រោយមកហាក់មានកំណើនមនុស្ស ប្រមូលផ្តុំច្រើន។ នេះបើយោងតាមសិលាចារឹកប្រាសាទបាតជុំ (K. 266 និង K. 267) ដែលចារនៅស.វ. ទី១០ បានរៀបរាប់អំពីការរៀបពិធីផ្សេងៗទាក់ទងនឹងជំនឿបែបព្រះពុទ្ធសាសនានៅម្តុំបន្ទាយក្តី និងនិយាយអំពីការសាងស្រះទឹក (ស្រះស្រង៉ែ)។

តាំងពីឆ្នាំ១៩៩១ សាកលវិទ្យាល័យសូហ៊ីយ៉ាបានចាប់ផ្តើមស្រាវជ្រាវ និងអភិរក្សប្រាសាទនេះ។ គោលបំណងសំខាន់របស់សាកលវិទ្យាសូហ៊ីយ៉ាដែលដឹកនាំដោយ លោកសាស្ត្រាចារ្យ យ៉ូស៊ីអាគី អ៊ីស៊ីហ្គាវ៉ា ពុំត្រឹមតែស្រាវជ្រាវនិងអភិរក្សប្រាសាទប៉ុណ្ណោះទេ ពោលគឺការបណ្តុះបណ្តាលធនធានមនុស្ស និងបង្កើតជាកម្មវិធីផ្សេងៗ ជាពិសេសការអប់រំមរតកវប្បធម៌ដល់កុមារ និងអ្នកភូមិដែលរស់នៅក្បែរប្រាសាទ និងតំបន់អង្គរទាំងមូល។[៤]

តាមរយៈការធ្វើកំណាយស្រាវជ្រាវកន្លងមក អ្នកស្រាវជ្រាវនៃសាកលវិទ្យាល័យនេះបានរកឃើញថាបន្ទាយក្តីមានការប្រើប្រាស់ច្រើនដំណាក់កាលនៃស្រទាប់វប្បធម៌ ការវិវត្តន៍ប្រវត្តិសាស្ត្រ និងសំណង់នៃប្រាសាទនេះផ្ទាល់។[៥] តាមរយៈតឹកតាងដែលឃើញមានស្លាកស្នាមនៃការដាប់ព្រះពុទ្ធរូបនៅលើសសរនិងជញ្ជាំង ហើយនិងរបកគំហើញប្រតិមាព្រះពុទ្ធចំនួន២៧៦បំណែក ពីការធ្វើកំណាយនៅប្រាសាទនេះផ្ទាល់ កាលពីឆ្នាំ២០០១ អ្នកស្រាវជ្រាវនៃសាកលវិទ្យាល័យសូហ៊ីយ៉ាបានអះអាងថាមានព្រឹត្តិការណ៍មួយកើតឡើងនាពាក់កណ្តាលស.វ.ទី១៣ ក្នុងរាជ្យព្រះបាទជ័យវរ្ម័នទី៨ (រូបលេខ៣)។ ព្រឹត្តិការណ៍នោះ អ្នកស្រាវជ្រាវយល់ថាទាក់ទងនឹងចលនាប្រឆាំងនឹងព្រះពុទ្ធសាសនា ដែលគេហៅថា "ប្រតិកម្មសាសនា"។ នោះដោយសារព្រះបាទជ័យវរ្ម័នទី៨ ព្រះអង្គបានប្តូរមកកាន់ព្រហ្មញ្ញសាសនា ដោយគោរពដល់ទេព ឥសូរ។[៦]

រូបលេខ៣

[៣] Nhim 2018: 37។

[៤] Nhim 2019: 31-47; Marui 2010: 194-210។

[៥] Marui 2001: 141-151; Arahi 2008; Tabata 2013: 77-101។

[៦] *សម្រាប់ការវិភាគលំអិតទាក់ទងនឹងរបកគំហើញព្រះពុទ្ធរូប សូមអាន* Ishizawa 2012: 8-29។

នៅពាក់កណ្តាលស.វទី១៥ ព្រះរាជាខ្មែរបានសម្រេចប្តូររាជធានីពីអង្គរទៅភាគខាងត្បូង ពោលគឺដំបូងនៅស្រីសន្ធរ ហើយប្តូរទៅចតុមុខក្នុងរយៈពេលខ្លី បន្ទាប់មកលង្វែក និងឧដុង្គ។[៧] ការប្តូររាជធានីនោះ អ្នកស្រាវជ្រាវយល់ថាបណ្តាលមកពីកងទ័ពអយុធ្យាបានចូលមកលុកលុយអង្គរ ហើយស្នើថា“ខ្មែរបោះបង់ចោលអង្គរ”។[៨] ប៉ុន្តែ នៅអង្គរខ្មែរនៅតែបន្តគោរពប្រតិបត្តិជំនឿសាសនាក្នុងក្របខ័ណ្ឌនៃព្រះពុទ្ធសាសនាថេរវាទ ដែលបានជ្រៀតចូលជ្រៅនៅក្នុងសង្គមខ្មែរចាប់ពីដើមស.វ.ទី១៤រៀងមក។តឹកតាងដ៏ច្បាស់នោះគឺខឿនព្រះវិហារយ៉ាងច្រើនដែលគេឃើញមាននៅតំបន់អង្គរ ជាពិសេសនៅក្នុងបរិវេណអង្គរធំ។[៩]

យោងតាមសិលាចារឹកភាសាបាលីចាស់ជាងគេដែលចារនៅគ.ស.១៣០៨ បានចារអំពីការសាងព្រះវិហារ ហើយបើតាមកំណត់ត្រារបស់អ្នកការទូតចិនដែលមកអង្គរនៅគ.ស.១២៩៦ និយាយអំពីព្រះវិហារឈើដែលមានប្រក់ក្បឿងនោះ ខឿនព្រះវិហារទាំងនោះអាចចាប់ផ្តើមសាងខ្លះនាចុងស.វ.ទី១៣ ហើយអាចមានការសាងសង់ច្រើនពីស.វ.ទី១៤ និងទី១៥រៀងមក។[១០] ខឿនព្រះវិហារនោះ ក៏មាននៅក្នុងបរិវេណបន្ទាយក្តីដែរ (រូបលេខ៤)។ដូច្នេះ យើងអាចសន្និដ្ឋានបានថាបន្ទាយក្តីនិងទីតាំងនៅជុំវិញប្រាសាទនេះមានការប្រើប្រាស់និងជាទីប្រតិបត្តិជំនឿសាសនាតាំងពីដើមសម័យអង្គរ ដូចជាការគោរពព្រហ្មញ្ញសាសនា ព្រះពុទ្ធសាសនាមហាយាន និងព្រះពុទ្ធសាសនាថេរវាទ។

នៅក្នុងអត្ថបទនេះ ដំបូងយើងនឹងបង្ហាញជាទូទៅអំពីតឹកតាងខ្លះៗនៅអង្គរ នាសម័យកណ្តាល តាមរយៈសិលាចារឹកនិងវត្ថុសិល្បៈដែលនៅមាន។[១១] យើងយល់ថា អង្គរនៅតែបន្តមានសហគមន៍រស់នៅគោរពប្រតិបត្តិជំនឿ មិនដូចអ្វីដែលគេគិតថា“ខ្មែរបោះបង់ចោលអង្គរ” នោះឡើយ។ បន្ទាប់មក យើងនឹងពិភាក្សា

រូបលេខ៤

[៧] សូមអាន Nhim 2016: 33-107។

[៨] Cœdès 1968: 236; Groslier 2006: 3-19។

[៩] ខឿនព្រះវិហារទាំងនោះបានសិក្សាដោយលោក ហង់រី ម៉ាសាល់ និងអ្នកស្រី អាសេ ឆ័មសុន។ សូមអាន Marchal 1918: 1-40; Thompson 1999។

[១០] Cœdès 2008; Zhou Daguan (ជីវ តាក្វាន់) 2006: 29។

[១១] សូមអានបន្ថែម អាំង ជូលាន ១៩៩៨: ៨៣-៩៣; Thompson 1999, 2004។

លម្អិតអំពីរបកគំហើញពីការធ្វើកំណាយបុរាណវិទ្យានៅបន្ទាយក្តី ដែលជាឧទាហរណ៍មួយអាចបញ្ជាក់បន្ថែមថានៅតែមានអ្នកស្រុកប្រើប្រាស់បន្ទាយក្តីជាទីគោរពបូជាពុំចេះដាច់។

កាលពីឆ្នាំ១៩៩៦ និង៩៧ យើងបានធ្វើកំណាយបុរាណវិទ្យានៅផ្នែកខាងលិចនៃខឿនព្រះវិហារក្នុងបរិវេណបន្ទាយក្តី ដែលពេលនោះយើងប្រទះឃើញកោដ្ឋជាច្រើន។ ក្នុងចំណោមកោដ្ឋដាក់ជាតុទាំងនោះគឺជាកាជន៍ដែលមកពីចិន វៀតណាម និងកាជន៍ខ្មែរ ហើយកាជន៍ចិនខ្លះ យើងអាចដឹងកាលបរិច្ឆេទនៅរវាងស.វ.ទី១៦ និង១៧។ នៅខែសីហា ឆ្នាំ២០១៩ យើងបានសម្រេចបើកកំណាយស្រាវជ្រាវនៅខឿនព្រះវិហារម្តងទៀត នៅផ្នែកខាងកើតនៃខឿន។ យើងបានរកឃើញកោដ្ឋដាក់ជាតុខ្លះ ប៉ុន្តែយើងពុំអាចកំណត់កាលបរិច្ឆេទច្បាស់លាស់បានទេ ហើយក៏ពុំដឹងថាគេយកមកបញ្ចុះនៅពេលណាដែរ។ ជំហានដំបូង យើងបានសន្និដ្ឋានថាកោដ្ឋទាំងនោះមានកាលបរិច្ឆេទ មិនចាស់ណាស់ណាទេ ពីព្រោះនៅក្បែរកោដ្ឋមានដបដាក់នៅលាយឡំ។ ដើម្បីដោះស្រាយចម្ងល់ យើងបានចុះទៅភូមិរហាលដែលស្ថិតនៅក្បែរប្រាសាទ សាកសួរអ្នកភូមិចាស់ៗ ថាតើពួកគាត់អាចដឹងអំពីការបញ្ចុះកោដ្ឋទាំងនោះដែរឬទេ? ម្យ៉ាងទៀត យើងចង់ដឹងអំពីទំនាក់ទំនងរវាងអ្នកភូមិនិងប្រាសាទជាពិសេសស្ថានភាពនៅមុនសង្គ្រាមនិងពេលសង្គ្រាមនៅទសវត្សរ៍១៩៧០និង៨០។

ការសិក្សានេះផ្អែកលើកំណាយស្រាវជ្រាវបុរាណវិទ្យា សិលាចារឹក និងប្រវត្តិទាក់ទងនឹងសង្គម ដើម្បីបង្ហាញអំពីការវិវត្តន៍ប្រវត្តិសាស្ត្របន្ទាយក្តី ក៏ដូចជាប្រវត្តិសាស្ត្រអង្គរដែរ។ ថ្វីត្បិតការសិក្សានេះពុំអាចបកស្រាយបានទាំងស្រុង ឬសុីជម្រៅចំពោះប្រវត្តិសាស្ត្របន្ទាយក្តី និងអង្គរនៅសម័យកណ្តាលក្តី យើងសង្ឃឹមថានឹងមានការចាប់អារម្មណ៍ថ្មីមួយ និងមានការពិភាក្សាលើប្រធានបទនេះនាពេលអនាគត។

១. តឹកតាងខ្លះៗជៅអង្គរជាសម័យកណ្តាល

សម័យកណ្តាលគិតចាប់ពីដើមស.វ.ទី១៤ ដល់ស.វ.ទី១៩។ ការកំណត់សម័យកាលមួយត្រូវមានការវិនិច្ឆ័យច្រើនយ៉ាង ជាពិសេសការប្តូរអារ្យធម៌ដ៏ធំមួយ។ នោះគឺ ភ្ជាប់ទៅនឹងការប្តូរសាសនាពីព្រហ្មញ្ញសាសនានិងព្រះពុទ្ធសាសនាមហាយាន មកជាព្រះពុទ្ធសាសនាថេរវាទនៅក្នុងសង្គមខ្មែរនាដើមស.វ.ទី១៤។ សិលាចារឹកភាសាសំស្ក្រឹត ដែលធ្លាប់ចារនៅសម័យអង្គរលែងមានប្រើ ជំនួសដោយភាសាបាលីដែលជាភាសាប្រើក្នុងព្រះពុទ្ធសាសនាថេរវាទ ហើយអ្នកស្រាវជ្រាវយល់ថា ចារឹកគោកស្វាយចេក K.754 គឺជាសិលាចារឹកភាសាបាលីដំបូងគេចារនៅក្នុងគ.ស.១៣០៨។[១២] ប្រាសាទធំៗសម្រាប់ព្រហ្មញ្ញសាសនាលែងមានសាង់ បើតាមសិលាចារឹកភាសាបាលីដដែលនេះចារថាព្រះរាជាបញ្ជាឲ្យសាង់ព្រះវិហារព្រះពុទ្ធសាសនា។[១៣] នេះបញ្ជាក់ឲ្យឃើញ

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[១២] Cœdès 2008។

[១៣] ប្រាសាទព្រហ្មញ្ញសាសនាចុង់ក្រោយគេសាង់នៅចុង់ស.វទី១៣ នោះគឺប្រាសាទតុប (កើត) ឬអ្នកស្រាវជ្រាវហៅ "មង្គលអាថ៌" ដែលជាឈ្មោះដើមនៃប្រាសាទមានចារនៅក្នុងសិលាចារឹករបស់ប្រាសាទនោះផ្ទាល់ (សូមមើល K. 567)។ ប្រាសាទតុបស្ថិតនៅក្នុងបរិវេណអង្គរធំ ខាងកើតប្រាសាទបាយ័ន្ត នៅខាងស្តាំផ្លូវឆ្ពោះទៅខ្វោងទ្វារជ័យ (រូបលេខ៥)។

ថាលៃង់មានការគោរពព្រហ្មញ្ញសាសនាជំដុំទៀតហើយ យ៉ាងណាក្តីបើតាមលោក Cœdès ដែលលោកយោង តាមសិលាចារឹករកឃើញនៅប្រាសាទបាយ័ន្ត (K.470) ថាសិលាចារឹកមានរៀបរាប់អំពីពិធីទាក់ទងនឹងព្រហ្មញ្ញ សាសនាដោយព្រាហ្មណ៍នៅឆ្នាំ១៣២៧។[16]

រូបលេខ៥

ជាក់ស្តែងសម្រាប់រចនាសម្ព័ន្ធរបស់ខឿនព្រះវិហារ ភាគច្រើនគេបានយកថ្មបាយក្រៀម និងថ្មកក់ដែលប្រើហើយនៅប្រាសាទសម័យអង្គរមកប្រើម្តងទៀត។ យ៉ាងណាក្តី តឹកតាងនៃខឿនព្រះវិហារអាចបង្ហាញថា ខ្មែរពុំបានបោះបង់ចោលអង្គរទាំងស្រុងឲ្យនៅក្នុងព្រៃនោះទេ។ ពោលគឺនៅតែមានសហគមន៍មនុស្សរស់នៅតូច ឬធំ ទោះបីគ្មានសាងសំណង់ធំៗក្តី។ ជាការពិតណាស់ យើងអាចនិយាយបានថាគំនិតអ្នកកាន់ព្រះពុទ្ធសាសនាថេរវាទមិនតម្រូវឲ្យចង់បានអ្វីដែលធំសម្បើមនោះឡើយ ពីព្រោះគេយល់ថា អ្វីៗមិនស្ថិតស្ថេរ។ ជំនឿនិងផ្នត់គំនិតនេះបានជ្រាបចូលយ៉ាងជ្រៅក្នុងសង្គមខ្មែរពីសម័យកណ្តាលមក។

ជាបន្ត យើងចង់បញ្ជាក់បន្ថែមអំពីគំនិតមិនស្របរបស់យើងនូវអ្វីដែលគេនិយាយ ឬមានទស្សនៈថា “ការរកឃើញអង្គរឡើងវិញ” និង “ខ្មែរបោះបង់ចោលអង្គរ”។ តាមពិតគំនិតទាំងនេះ គឺកើតឡើងនៅពាក់កណ្តាលស.វ.ទី១៩ ដោយពួកអឺរ៉ុប ជាពិសេសបារាំង បន្ទាប់ពីគេបានបោះពុម្ពសៀវភៅរបស់លោក ហង់រី មូហូត (Henri Mouhot)។ បើនិយាយឲ្យច្រាកដទៅ គឺជារោហារសាស្ត្រនៃផ្នត់គំនិតអាណានិគម។ លោក ហង់រី មូហូត ជាជនជាតិបារាំងដែលបានមកអង្គរនៅឆ្នាំ១៨៦០។ គាត់បានពិពណ៌នាអំពីអង្គរ ដោយបានកោតសរសើរស្ទប់ស្ទែងយ៉ាងខ្លាំងនូវស្នាដៃសិល្បៈដ៏ល្អពិចិត្រ។[17] តាមពិតទៅនៅក្នុងសៀវភៅរបស់គាត់ លោក មូហូត ពុំបានសរសេរពាក្យឬប្រយោគថា “រកឃើញអង្គរឡើងវិញ” ឬ “ខ្មែរបោះបង់ចោលអង្គរ” ឡើយ។ ប៉ុន្តែគាត់បានរៀបរាប់ថា ខ្មែរភ្ញេចទាំងអស់អំពីស្នាដៃដ៏អស្ចារ្យនៃសំណង់អង្គរវត្តដែលបានសាងដោយបុព្វបុរស

[16] Cœdès 1942: 187-189។

[17] Mouhot 1864 (I & II)។

របស់ខ្លួន។[16] ដូច្នោះហើយ យើងគួរលើកជាសំណួរថា តើខ្មែរពិតជាបោះបង់ចោលអង្គរ, តើគេរកឃើញអង្គរវិញ, តើខ្មែរក្វេចអង្គរទាំងស្រុងមែនឬទេ?

អំណឹះតទៅ យើងនឹងបង្ហាញត្រួសៗអំពីតឹកតាងដែលមាននៅអង្គរនាសម័យកណ្តាល។ យើងដឹងស្ទើរតែគ្រប់គ្នាអំពីប្រវត្តិរបស់ព្រះបាទអង្គចន្ទទី១ (ឬក្នុងព្រះរាជពង្សាវតារហៅថា ព្រះបាទចន្ទរាជា) ដែលជាក្សត្រស្ថាបនិករាជធានីលង្វែកនៅស.វ.ទី១៦។ ក្រោយរៀបចំព្រះនគរបានប្រសើរឡើងវិញ ព្រះអង្គបានយាងត្រឡប់ទៅអង្គរ និងផ្តួចផ្តើមកិច្ចការខ្លះៗនៅរាជធានីបុរាណ។ យោងតាមសិលាចារឹកពីរផ្ទាំងនៅរួតទី១ នៅមុខឦសានៃប្រាសាទអង្គរវត្តបានចារថាព្រះមហាក្សត្រ (អ្នកស្រាវជ្រាវយល់ថាជា ព្រះបាទអង្គចន្ទ) បានធ្វាក់បំពេញចម្ងាក់ដែលពុំទាន់ហើយ កាលជំនាន់ព្រះមហាក្សត្រ មហាវិម្ភុលោក (ព្រះបាទសូរ្យវរ្ម័នទី២)។ សិលាចារឹកបានបញ្ជាក់កាលបរិច្ឆេទអំពីការចាប់ផ្តើមធ្វាក់នៅគ.ស. ១៥៦៦ និងបញ្ចប់នៅគ.ស. ១៥៦៤។[17] នៅក្នុងកំណត់ត្រារបស់ជនជាតិព័រទុយហ្គាល់ឈ្មោះ Diogo Do Couto ដែលបានមកអង្គរនៅគ.ស. ១៥៩០ក៏បាននិយាយអំពីព្រះរាជាខ្មែរ (ព្រះបាទអង្គចន្ទ) មកទាក់ជំរីនិងធ្លារសម្ផាតរុក្ខជាតិ ដើមឈើតូចៗដែលដុះនៅលើប្រាសាទដែរ។[18]

ក្រោយមកព្រះបាទសដ្ឋា ដែលត្រូវជាព្រះរាជនត្តា (ចៅ) របស់ព្រះបាទអង្គចន្ទ ក៏បានយាងត្រឡប់មកអង្គរ ហើយបានជួសជុលផ្នែកខ្លះនៃប្រាសាទអង្គរវត្ត។ យោងតាមសិលាចារឹកចារនៅស.វ.ទី១៦ (មានលេខសម្គាល់ IMA 2 និង IMA 3) ដោយព្រះរាជមាតារៀបរាប់អំពីគុណសម្បត្តិរបស់ព្រះមហាក្សត្រដែលជាព្រះរាជបុត្រ (ព្រះបាទសដ្ឋា) បានជួសជុលព្រះពិស្ណុលោក (ឈ្មោះអង្គរវត្តនាពេលនោះ) ឲ្យដូចបុរាណកាល។ យើងលើកជាសំណួរដោយងាយថា បើខ្មែរពិតជាក្វេចអង្គរដែលបុព្វបុរសបានសាងទាំងស្រុងមែន តើហេតុអ្វីបានជាខ្មែរនៅសម័យកណ្តាលនៅចងចាំពាក្យ ឬឈ្មោះ វិម្ភុលោក ឬ ពិស្ណុលោក?

វិម្ភុលោក ឬ ពិស្ណុលោក គឺរំឭកដល់មរណនាមរបស់ព្រះបាទសូរ្យវរ្ម័នទី២ (គ.ស. ១១១៣ ដល់ប្រ.គ.ស. ១១៥០) ដែលជាក្សត្រស្ថាបនិកប្រាសាទអង្គរវត្តនៅពាក់កណ្តាលទី១នៃស.វ.ទី១២ ពោលគឺ បរមវិម្ភុលោក។ ឈ្មោះ ពិស្ណុលោក មានសរសេរច្រើននៅសិលាចារឹកសម័យកណ្តាលស.វ.ទី១៦ និងទី១៧ នៅអង្គរវត្ត។ ឧទាហរណ៍ សិលាចារឹកនៅស.វ.ទី១៦ "...បានសាងព្រះមហានគរ ឥន្ទ្រប្រស្ថ នុ ព្រះពិស្ណុលោក នុ សព្វប្រការ..."។[19] សិលាចារឹកមួយទៀតចារនៅគ.ស១៦៣២ "...ឆ្នាំជា សុរច្ច លោយ នាក្នុង ឥន្ទបថ ម្ហានគរ ស្រីសុធរ បវរពិស្ណុវលោក (ពិស្ណុលោក) នោះ..."។[20]

ព្រះមហានគរ ឥន្ទ្រប្រស្ថ ឬ ឥន្ទិបថ ម្ហានគរ គឺជាឈ្មោះក្រុងមួយនាពេលនោះ ពោលគឺ អង្គរធំ។ ឈ្មោះ

[16] Mouhot 1864 (II): 279។

[17] Cœdès 1962: 235-248។

[18] Groslier 2006 [1958]: 52-55។

[19] APSARA Authority & CKS 2013: 42។

[20] APSARA Authority & CKS 2013: 56។

ឥន្ទ្រប្រស្ន ក៏មានសរសេរនៅក្នុងកំណាព្យ "ល្បើកអង្គរវត្ត" នៅស.វ.ទី១៧ដែរ គឺជាឈ្មោះព្រះរាជវាំងរបស់ព្រះឥន្ទ្រដែលព្រះពិស្ណុការចម្លងយកមកសាងនៅស្ថានកណ្តាលសម្រាប់ព្រះកេតុមាលា។[៦១]

តឹកតាងទាំងនេះបង្ហាញឲ្យឃើញច្បាស់ថាជំនឿ និងទស្សនៈរបស់ខ្មែរនៅជាប់ជានិច្ចចំពោះអង្គរ។ លោកសាស្ត្រាចារ្យ អាំង ជូលាន ដែលជានរវិទូខ្មែរដ៏ល្បីបានអះអាងថា "តើគេអាចពន្យល់ដូចម្តេចសម្រាប់អ្នកស្រុកដែលរស់នៅទីនោះបានបង្ហាញកន្លែងព្រះបរមរាជវាំងនៅអង្គរធំដល់ជនជាតិអេស្ប៉ាញនៅស.វ.ទី១៦ ហើយប្រាកដណាស់ដល់បារាំងនៅស.វ.ទី១៩?"[៦២]

មានតឹកតាងជាច្រើនទៀត ប៉ុន្តែយើងសូមលើកជាឧទាហរណ៍ខ្លះមកបង្ហាញនៅទីនេះ។[៦៣] ព្រះពុទ្ធរូបចូលនិព្វានដ៏ធំប្រវែង៧៩ម៉ែត្រនៅផ្នែកខាងក្រោយនៃប្រាសាទបាគួន ថ្វីត្បិតគេពុំដឹងកាលបរិច្ឆេទច្បាស់លាស់អ្នកស្រាវជ្រាវមុនៗបានឲ្យជាសេចក្តីសន្និដ្ឋានថាអាចប្រហែលសាងនៅស.វ.ទី១៦ ពេលដែលព្រះបាទអង្គចន្ទយាងត្រឡប់មកអង្គរវិញ។ ប៉ុន្តែថ្មីៗនេះ តាមរយៈការកំណត់អាយុកាលតាមបច្ចេកទេសវិភាគ (C14) បានបង្ហាញថាព្រះពុទ្ធរូបចូលនិព្វានអាចសាងនៅរវាងគ.ស. ១៤៣១ ដល់គ.ស. ១៤៤៧។[៦៤] លើសពីនេះ ការស្រាវជ្រាវថ្មីៗទាក់ទងនឹងព្រះពុទ្ធរូបក៏រកឃើញដែរថាមានព្រះពុទ្ធរូប៥០អង្គដែលសាងនៅអង្គរនៅស.វ.ទី១៥។ ការសិក្សានោះបានធ្វើការប្រៀបធៀប ដោយវិភាគលម្អិតលើព្រះពុទ្ធរូបតូចមួយ ដែលគេបានរកឃើញនៅក្នុងអណ្តូង នៃប្រាសាទបាយ័ន្តជាមួយនឹងប្រតិមាព្រះពុទ្ធដ៏ធំ "ជ័យពុទ្ធមហានាថ" កាលពីឆ្នាំ១៩៣៣ នោះ។[៦៥]

នៅលើប្រាសាទភ្នំបាខែងក៏គេបានឃើញព្រះពុទ្ធរូបទ្រង់ព្នែនដ៏ធំមួយគ្របដណ្តប់ជិតលើប្រាង្គកណ្តាលទាំងមូល។ ដោយសារព្រះពុទ្ធរូបនោះបាក់បែកខ្លាំងពេក នៅឆ្នាំ១៩២២ អ្នកស្រាវជ្រាវបារាំងបានសម្រេចរើចេញ ដើម្បីឲ្យឃើញកំពូលប្រាសាទពីបុរាណឡើងវិញខ្លះ។[៦៦] សម្រាប់កាលបរិច្ឆេទនៃព្រះពុទ្ធរូបនោះ អ្នកស្រាវជ្រាវខ្លះយល់ថា សាងនៅចុងស.វ.ទី១៦ ខ្លះយល់ថាសាងនៅស.វ.ទី១៧។[៦៧] បើតាមសិលាចារឹក K. 465 មានកាលបរិច្ឆេទគ.ស.១៥៨៣ ចារថាមានព្រះសង្ឃមួយអង្គនិមន្តទេសន៍មកពីទីឆ្ងាយ បានមកសាងស្តូម និងជួសជុលព្រះពុទ្ធរូបដែលបាក់បែកចំនួន២៦អង្គ ហើយព្រះអង្គក៏បាននិមន្តទៅជួសជុលព្រះពុទ្ធរូបចំនួន៥០អង្គនៅភ្នំព្រះរាជទ្រព្យ (ឧដុង្គ) និងវិហារមួយដែរ។[៦៨] ទោះបីជាសិលាចារឹកនេះពុំបានរៀបរាប់ផ្ទាល់អំពីព្រះពុទ្ធរូបទ្រង់ព្នែនក្តី ប៉ុន្តែពេលវេលានៃការសាងហាក់បីដូចមិនខុសគ្នាប៉ុន្មានពីព្រះពុទ្ធរូបដែលបាក់បែកទាំងនោះទេ។

សិលាចារឹក K. 715 ដែលមានកាលបរិច្ឆេទនៅគ.ស.១៥៨៦ រៀបរាប់អំពីឈ្មោះអ្នកចារសិលាចារឹកនាម

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[៦១] Aymonier 1878។

[៦២] Ang 2007: 376។

[៦៣] *សូមអានបន្ថែម អាំង ជូលាន ១៩៩៨: ៨៣-៩៣*។

[៦៤] Leroy et al. 2015។

[៦៥] Polkinghorne 2018។

[៦៦] *អាំង ជូលាន ១៩៩៨: ៨៦*។

[៦៧] Jacques 2006។

[៦៨] Khin 1978: 271-280។

ចៅមហាកុសល ថាបានមកដល់ភ្នំគូលែនដើម្បីជួសជុលព្រះពុទ្ធរូបបាក់បែកនៅព្រះអង្គធំ។[២៩] រីឯសិលាចារឹកមួយទៀតរបស់ភ្នំគូលែន K. 1006 និយាយអំពីមនុស្សម្នាក់នាម ព្រះរាជមុនិ មកពីអយុធ្យាមកមើលព្រះពុទ្ធរូបនៅទីនោះ ហើយមកមើលព្រះនៅភ្នំបាខែង។[៣០] ដូចដែលយើងឃើញមានព្រះពុទ្ធរូបជាច្រើនអង្គនៅរួតព្រះពាន់នៃប្រាសាទអង្គរវត្ត គេជឿថាព្រះពុទ្ធរូបទាំងនោះបានសាង ឬយកមកថ្វាយនៅអង្គរវត្ត នៅរវាងចាប់ពីស.វ.ទី១៦។ លើសពីនេះទៀត នៅសម័យកណ្តាល គេក៏បានចារសិលាចារឹកចំនួន៤១ផ្ទាំងនៅតាមសសរនិងជញ្ជាំងនៅអង្គរវត្តដែរ។ តឹកតាងដូចបានរៀបរាប់ខាងលើនេះ បង្ហាញឲ្យឃើញថាអង្គរនៅសម័យកណ្តាលបានក្លាយជាទីគោរពបូជានៃអ្នកកាន់ព្រះពុទ្ធសាសនាមកទីជិតឆ្ងាយពុំដាច់ មិនថាអ្នកស្រុកនៅអង្គរ ឬនៅប្រទេសជិតខាង គឺមានមកពីទីឆ្ងាយដូចជាជនជាតិយីពុនជាដើម។ល។[៣១]

២. តឹកតាងដែលមានជោបជ្ឈាយក្តីក្រែាយសម័យអង្គរ

នៅក្នុងអត្ថបទនេះ យើងប្រើពាក្យ “ខឿនព្រះវិហារ” ហៅសំដៅលើព្រះវិហារ ដែលសាងនៅសម័យកណ្តាល ហើយបច្ចុប្បន្ននេះនៅសល់តែខឿន។ មូលហេតុមួយទៀតនាំឲ្យយើងប្រើពាក្យនេះគឺថា អ្នកស្រាវជ្រាវខ្មែរ ជាពិសេសអ្នកជំនាញនៅអាជ្ញាធរអប្សរាបានប្រើជាទូទៅនៅក្នុងរបាយការណ៍ស្រាវជ្រាវរបស់ពួកគេ។[៣២]

កាលពីខែសីហា ឆ្នាំ២០១៩ ដោយមានកិច្ចសហការជាមួយអាជ្ញាធរអប្សរា យើងបានធ្វើកំណាយស្រាវជ្រាវនៅផ្នែកខាងកើតនៃខឿនព្រះវិហារក្នុងបរិវេណបន្ទាយក្តី។ គោលបំណងរបស់យើង គឺចង់ដឹងអំពីទំនាក់ទំនងរវាងខឿនព្រះវិហារ និងអគារតូចថ្មបាយក្រៀម (ដោយសារអគារតូចនោះគ្មានឈ្មោះ យើងឲ្យឈ្មោះ សម្រាប់ការស្រាវជ្រាវថា “C19”) (រូបលេខ៦ និង៧)។ យើងក៏ចង់បញ្ជាក់ថា តើនៅផ្នែកខាងកើតនៃខឿននោះមានកោដ្ឋដែលគេយកមកកប់ ដូចកាលយើងរកឃើញនៅកំណាយកាលពី ឆ្នាំ១៩៩៦-៩៧ ដែរឬទេ?

កាលពីកំណាយនៅឆ្នាំ១៩៩៦-៩៧ យើងបានរកឃើញថាខឿនព្រះវិហារនេះ ធ្វើជាន់ពីលើសំណង់ចាស់សម័យអង្គរ។ យោងតាមរចនាសម្ព័ន្ធនៃខឿន យើងបានសន្និដ្ឋានថាប្រហែលសាងនៅរវាងស.វ.ទី១៥ ឬទី១៦។ យើងបានប្រទះឃើញកោដ្ឋដាក់ធាតុ និងបំណែកគាជន៍ជាច្រើន។ កោដ្ឋ និងបំណែកគាជន៍ទាំងនោះមាន ផលិតនៅចិន វៀតណាម និងខ្លះទៀតមិនស្គាល់ប្រភព។ កោដ្ឋដែលជាគាជន៍ចិនខ្លះ យើងអាចកំណត់កាលបរិច្ឆេទបាននៅរវាងស.វ.ទី១៦ និងទី១៧ (រូបទី៨ និង៩)។[៣៣] តាមរយៈការធ្វើកំណាយស្រាវជ្រាវ

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[២៩] Khin 1980: 133-134។

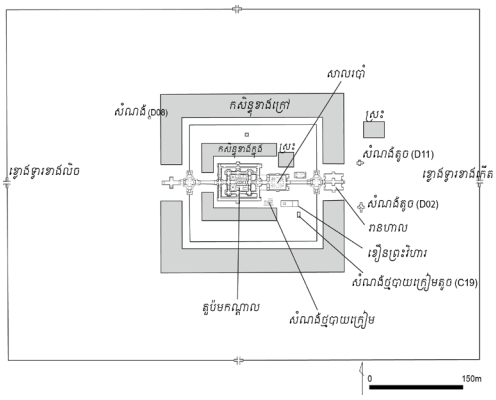
[៣០] Vickery 1982: 77-86។

[៣១] ឃើញមានអក្សរថ្មជាភាសាយីពុនដែលគេសរសេរដោយទឹកខ្មៅចំនួន១៦ផ្ទាំងនៅ តាមសសរ និងជញ្ជាំងនៅប្រាសាទអង្គរវត្តស្រាប់ សូមអាន Ishizawa 2015។ ទាក់ទងនឹងអង្គរ ជាទីប្រមូលផ្តុំអ្នកជំនួយាត្រា សូមអាន Thompson 2004។

[៣២] អាជ្ញាធរអប្សរា ២០០១-២០០២ (សូមអរគុណដល់លោកបណ្ឌិត អ៊ិ ដារិទ្ធ ដែលបានផ្តល់ឯកសារនេះ)។ សូមអាន អាជ្ញាធរអប្សរា ២០០១។

[៣៣] Miyamoto 2010.

រូបលេខ៦. រណ្តៅកំណាយ និង C19



រូបលេខ៧. ផែនទីរួមនៃបន្ទាយក្តី

កន្ទង់មកនៅខឿនព្រះវិហារនៅអង្គរធំ និងប្រាសាទក្នុងឧទ្យានអង្គរដទៃទៀត រហូតមកទល់សព្វថ្ងៃគេពុំប្រទះឃើញមានកោដ្ឋដាក់ជាតុឡើយ។[៣៦]

លើកលែងតែកំណាយពីរកន្លែងដែលអ្នកជំនាញអាជ្ញាធរអប្សរាបានធ្វើ ហើយប្រទះឃើញកោដ្ឋដាក់ជាតុ។ កន្លែងទីមួយ គឺប្រាសាទគោកប៉ាទ្រី ដែលស្ថិតនៅចម្ងាយពីក្រុងសៀមរាបប្រមាណ៤គីឡូម៉ែត្រទៅភាគខាងលិច ផ្លូវទៅព្រលានយន្តហោះសៀមរាប។ កន្លែងមួយទៀតស្ថិតនៅប្រាសាទលលៃដែលជាប្រាសាទសាងនៅក្នុងរាជ្យ ព្រះបាទយសោវរ្ម័នទី១ នាចុងស.វ.ទី៩។ គោកប៉ាទ្រីជាប្រាសាទសាងនៅសម័យអង្គរ ប៉ុន្តែតាមរយៈកំណាយកាលពីឆ្នាំ២០០៥ អ្នកជំនាញបានរកឃើញតឹកតាងជាច្រើន ដែលបញ្ជាក់ថាទីតាំងគោកប៉ាទ្រីនៅតែបន្តប្រើប្រាស់នៅសម័យកណ្តាលដែរ។[៣៥] *កំណាយនោះ គេរកឃើញខឿនព្រះវិហារ ចេតិយមួយ និងកោដ្ឋដាក់ជាតុជាច្រើន។ កោដ្ឋដាក់ជាតុភាគច្រើនជាភាជន៍ចិនដែលមានកាលបរិច្ឆេទពីរវាងស.វ.ទី១៥ ដល់១៩, ភាជន៍ជប៉ុនមានកាលបរិច្ឆេទពីរវាងស.វ.ទី១៦ ដល់១៨, ភាជន៍ថៃពីរវាងស.វ.ទី១៥ និង១៦, និងភាជន៍ខ្មែរពីរវាងស.វ.ទី១៥ ដល់១៩។ លើសពីនេះ តាមរយៈការកំណត់អាយុកាលតាមបច្ចេកទេសវិភាគ* (C14) *ទៅលើ*

រូបលេខ៨

រូបលេខ៩

[៣៦] Nara Institute 2012: 123-164; Chhan 2000: 295-303; *អាជ្ញាធរអប្សរា ២០០១-២០០២។*

[៣៥] *អាជ្ញាធរអប្សរា ២០១៣: ២២៥-២៣៤។ សូមអរគុណលោក អន សុភាព ដែលបានផ្តល់នូវរបាយការណ៍នេះ។*

ឆ្នឹងដែលមាននៅក្នុងកោដ្ឋ ដោយក្រុមអ្នកស្រាវជ្រាវនូវែលសេឡង់បានបង្ហាញកាលបរិច្ឆេទរបស់ឆ្នឹងទាំងនោះនៅចន្លោះឆ្នាំ ១៦៦៥ និង១៦៦៨។[៣៦] ចំណែកឯកំណាយនៅប្រាសាទលលៃវិញ អ្នកស្រាវជ្រាវអាជ្ញាធរអប្សរាបានប្រទះឃើញកោដ្ឋចំនួន១១ក្នុងនោះមានកោដ្ឋដែលជាភាជន៍របស់ខ្មែរមួយ (មិនដឹងកាលបរិច្ឆេទ) និង១០ទៀតជាភាជន៍ផលិតនៅប្រទេសចិន។ ភាជន៍ចិនទាំងនោះមានប្រភពមកពីខេត្តហ្វូជៀន ហ្វាងទុង និងជៀងស៊ី ដែលមានកាលបរិច្ឆេទនៅរវាងស.វ.ទី១៧ ដល់១៩។[៣៧]

កាលពីការធ្វើកំណាយនៅស្រះស្រងំដោយលោក ហ្គ្រលលីយេ (B. P. Groslier) នាទសវត្សរ៍១៩៦០ បានរកឃើញវត្ថុសិល្បៈជាច្រើនដែលគេដាក់សែនសម្រាប់សពៗវត្ថុសិល្បៈខ្លះមានកាលបរិច្ឆេទពីស.វ.ទី១១ ដល់១៣ និងខ្លះទៀតគេផលិតនៅស.វ.ទី១៤ និង១៥។ តាមរយៈកំណាយនោះ គេសន្និដ្ឋានថាថ្ងីត្បិតស្រះស្រងំមិនមែនជាកន្លែងសម្រាប់ពិធីបុណ្យសព ប៉ុន្តែជាកន្លែងកប់សពសម្ងាត់មួយដែលគេបានប្រើនៅពេលទ័ពអយុធ្យាចូលវាយលុកអង្គរនៅស.វ.ទី១៥។[៣៨]

ដូចបានរៀបរាប់ខាងលើ តាមរយៈកំណាយនានានៅអង្គរ គេពុំទាន់រកឃើញកោដ្ឋដាក់ជាតុ ដែលមានកាលបរិច្ឆេទនៅសម័យអង្គរនៅឡើយទេរហូតមកទល់ពេលនេះ។ ម្យ៉ាងទៀត គ្មានសិលាចារឹកសម័យបុរាណណាមួយបង្ហាញអំពីប្រពៃណីនៃការបញ្ចុះកោដ្ឋ ឬជាតុនៅប្រាសាទដែរ។ ទីនេះ យើងលើកជាសំណួរថា តើការបញ្ចុះកោដ្ឋដាក់ជាតុនៅប្រាសាទ ឬទីស្ថានគោរពបូជា មានប្រពៃណីបន្តពីសម័យអង្គរមកសម័យកណ្តាលនិងបច្ចុប្បន្នដែរឬទេ?

បើតាមកំណត់ត្រារបស់អ្នកការទូតចិន ជីវ តាក្វាន់ ដែលមកអង្គរនៅឆ្នាំ១២៩៦ បានរៀបរាប់ថា "គ្មានមឈូសសម្រាប់ដាក់សព...គេយកសពទៅចោលនៅឆ្ងាយក្រៅក្រុង និងទីដែលគ្មានមនុស្សនៅ គេទុកសពចោល ហើយត្រឡប់មកវិញ... ប៉ុន្តែស្តេចគេបញ្ចុះនៅប្រាសាទ ខ្ញុំមិនដឹងថាគេបញ្ចុះសព ឬជាតុទេ"។[៣៩] ជីវ តាក្វាន់ ក៏បានកត់ត្រាដែរ ថាអង្គរវត្ត គឺជាផ្នូររបស់លូបាន (Lu Ban) ដែលជាអ្នកសិល្បៈចិនដ៏ល្បីនៅសម័យបុរាណ។ ដូច ជីវ តាក្វាន់ បានរៀបរាប់អាចប្រាសាទជាទីដែលបញ្ចុះសពរបស់ស្តេច ប៉ុន្តែយើងមិនច្បាស់ថាតើអ្វីដែលគាត់ពិពណ៌នានោះឮតាមគេនិយាយ ឬគ្រាន់តែជារឿងព្រេង?

ទាក់ទងថា "តើអង្គរវត្តជាប្រាសាទឬជាផ្នូរ" លោក សឺដែស បានបកស្រាយលើប្រធានបទនេះ។[៤០] គំនិតដែលថាប្រាសាទអង្គរវត្តជាផ្នូរនោះចេញពីលោក Jean Przylusky។ យោងតាមលោក សឺដែស បានបកស្រាយថាអង្គរវត្តពុំមែនជាផ្នូរទេ ប៉ុន្តែគឺជាស្ថានរបស់ព្រះនារាយណ៍ ជាទីដែលព្រះបាទសូរ្យវរ្ម័នទី២ព្រះអង្គយាងទៅសោយសុខក្រោយសុគតទៅ។ ម្យ៉ាងទៀត គំនិតនេះ ពោលគឺជានិមិត្តរូបភ្ជាប់ទៅនឹងមរណនាមរបស់ព្រះអង្គនោះគឺ "បរមវិស្ណុលោក"។

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[៣៦] អាជ្ញាធរអប្សរា ២០១៣។

[៣៧] ជូ ជុន ២០១៤។

[៣៨] Dumarçay and Courbin 1988: 21-45។

[៣៩] Zhou Daguan 2006: 53។

[៤០] Cœdès 2007។

គំនិតខាងលើនេះលែងមានហើយក្រោយមកៗ ចាប់តាំងពីសម័យកណ្តាលមក អ្នកស្រុកតែងយកជាតុទៅបញ្ចុះនៅ "ក្តី ឬ កុដិ" ដើម្បីឲ្យសពបានទៅសុគតិភពតាមរយៈប្រាសាទដែលសាងដោយបុព្វបុរស ប៉ុន្តែនេះពុំមែនប្រដូចខ្លួនស្មើនឹងទេពដូចសម័យអង្គរឡើយ។[៦១] ម្យ៉ាងទៀត ចាប់ពីសម័យកណ្តាលទាំងស្តេច ទាំងរាស្ត្រសាមញ្ញ នៅប្រើប្រាសាទ ដោយចាត់ទុកប្រាសាទជាទីស្ថានរបស់ទេព ហើយរៀបពិធីផ្សេងៗ ថ្វាយវត្ថុមានតម្លៃ ឬបញ្ចុះកោដ្ឋនៅទីស្ថានប្រាសាទ ក្នុងបំណងប្រាថ្នាភ្ជាប់ខ្លួនជាមួយនឹងទេព។ ឧទាហរណ៍ សិលាចារឹកនៅស.វ.ទី១៦នៅអង្គរវត្ត (IMA2) ដែលព្រះមាតារបស់ព្រះរាជាបានចារ។[៦២]

សិលាចារឹកនោះនិយាយថា ព្រះមាតាបានកោរព្រះកេសាដាក់លាយជាមួយខ្ទុកលាបព្រះពុទ្ធរូប ដើម្បីថ្វាយនៅរួតបាកាននៅក្នុងពិធីសាសនាមួយ។ នោះបញ្ជាក់ឲ្យឃើញថាព្រះមាតាមានព្រះរាជហឫទ័យភ្ជាប់ព្រះកាយជាមួយនឹងទេព។ ទំនៀមនេះនៅតែបន្តរហូតមកដល់សព្វថ្ងៃ ដូចជាគេលះបង់គ្រឿងអលង្ការ ឬវត្ថុប្រើប្រាស់ផ្សេងៗឲ្យទៅវត្ត នៅពេលគេសិតព្រះ ដើម្បីដាក់តម្កល់នៅវត្តថ្មី។[៦៣]

ចំពោះកោដ្ឋដាក់ជាតុដែលរកឃើញនៅបន្ទាយក្តី ហើយមានកាលបរិច្ឆេទនៅស.វ.ទី១៦ និង១៧នោះ អាចប្រហែលអ្នកស្រុកដែលរស់នៅមុំប្រាសាទយកមកបញ្ចុះ។ ប្រពៃណីនៃការបញ្ចុះកោដ្ឋដាក់ជាតុនៅប្រាសាទនេះបានចាប់ផ្តើមពីសម័យកណ្តាល ដោយនៅជាប់ជាមួយនឹងព្រះពុទ្ធសាសនាថេរវាទ។ លើសពីនេះ នៅក្នុងសិលាចារឹកសម័យកណ្តាលក៏មានចារពាក្យទាក់ទងនឹង "ជាតុ" ដូចមានចារនៅក្នុងសិលាចារឹកវត្តនគរជាភាសាបាលី និងខ្មែរ (K.82) នៅក្នុងគ.ស.១៥៦៦។[៦៤] ការបញ្ចុះកោដ្ឋនៅទីស្ថានប្រាសាទនេះនៅបន្តរហូតមកដល់បច្ចុប្បន្ន។

៣. របកគំហើញថ្មីដៅខឿនព្រះវិហារក្នុងឆ្នាំ២០១៩

យើងបានធ្វើកំណាយនៅផ្នែកខាងកើតនៃខឿនព្រះវិហារក្នុងបរិវេណបន្ទាយក្តីនៅខែសីហា ឆ្នាំ២០១៩ រយៈពេល៣សប្តាហ៍ (រូបលេខ១០ និង១១)។ ខឿនព្រះវិហារនៅបន្ទាយក្តីមានសីមាព័ទ្ធជុំវិញទាំងប្រាំបីទិស និងនៅផ្នែកខាងលិចនៅលើខឿនមានជើងទម្រព្រះពុទ្ធរូប។[៦៥] យើងបង្កើតរណ្តៅធ្វើកំណាយភ្ជាប់ពីខឿនព្រះវិហារទៅកូនអគារឋបាយក្រៀម៧,៥០ម. (ជើង-ត្បូង) និង៤,៥ម. (កើត-លិច) (រូបលេខ១២)។ នៅជាប់នឹងជ្រុងខាងកើតនៃខឿន យើងប្រទះឃើញកោដ្ឋដាក់ជាតុ ដែលជាកាជន៍ចំនួន៣ ចានគោមដាក់ជាតុចំនួន៣

[៦១] អាំង ជូលាន ២០១៤។

[៦២] Pou 1970: 103-4។

[៦៣] អាំង ជូលាន ២០០៦-២០០៧: ២៨-៣១។

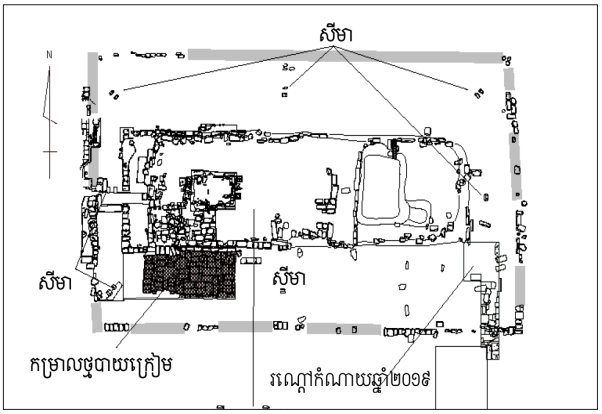
[៦៤] Filliozat 1969:99-100។

[៦៥] ខឿនព្រះវិហារខ្វះនៅអង្គរជំនួសីមាព័ទ្ធជុំវិញ ខឿនខ្វះនៅផ្នែកខាងលិចជាប់នឹងខឿន មានជាកូនប្រាសាទបុរាណ ឬជាចេតិយដែលជាលក្ខណៈពិសេសនៃព្រះវិហារនៅសម័យកណ្តាល។

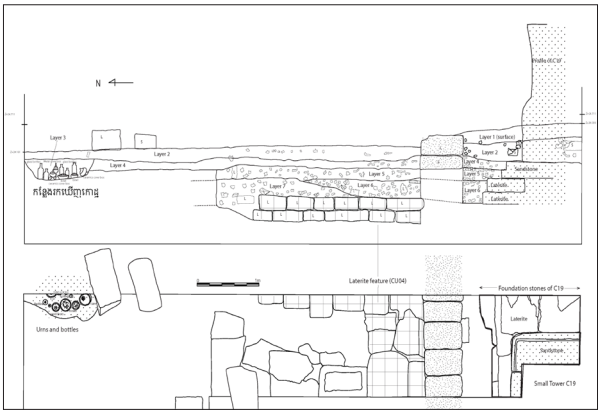
និងមានដបចំនួន៤ដែលគេកប់នៅលាយឡំជាមួយនឹងកោដ្ឋ (រូបលេខ១៣ និង១៤)។ យើងយល់ថាវត្ថុទាំងនោះពុំមានកាលបរិច្ឆេទចាស់ណាស់ណាទេ នោះគឺយើងគិតទៅលើដប និងស្រទាប់ដីថ្មីដែលគេទើបនឹងជីកកប់។ អ្នកភូមិម្នាក់ធ្វើការជាមួយយើងបានប្រាប់ថាភាជន៍ដែលប្រើជាកោដ្ឋដាក់ធាតុទាំងនោះ ពួកគាត់ធ្លាប់

រូបលេខ១០

រូបលេខ១១



រូបលេខ១២. ឫងំកំណាយនៅខឿនព្រះវិហារ



រូបលេខ១៣. រណ្តៅកំណាយ និងទីតាំងរកឃើញកោដ្ឋ

រូបលេខ១៤. ស្ថានភាពនៃការបញ្ចុះកោដ្ឋ

រូបលេខ១៥. ប្រភេទភាជន៍

ប្រើពីមុន ប៉ុន្តែសព្វថ្ងៃពុំមានប្រើទៀតឡើយ (រូបលេខ១៥)។ កាជន៍ប្រភេទនោះក៏ឃើញមានប្រើជាកោដ្ឋ ជាក់ជាតុនៅតំបន់ផ្សេងទៀតដែរ (រូបលេខ១៦)។

បន្ទាប់ពីការធ្វើកំណាយ យើងបានចុះទៅភូមិរហាល ដើម្បីសាកសួរចាស់ៗនៅក្នុងភូមិអំពីការចងចាំរបស់គាត់ទាក់ទងនឹងបន្ទាយក្តី។ ជាសំណាងល្អ យើងបានជួបលោកយាយម្នាក់ឈ្មោះភាជ កើតនៅឆ្នាំ១៩៣៤ (អាយុ៨៥ឆ្នាំ) នៅភូមិរហាលនេះតែម្តង (រូបលេខ១៧)។ គាត់ប្រាប់ថាឪពុករបស់គាត់កើតនៅរវាងឆ្នាំ១៨៩០ ហើយទទួលមរណភាពកាលពីជំនាន់ខ្មែរក្រហម ដែលពេលនោះមានអាយុប្រហែល៨៨ឆ្នាំ។ កាលពីជំនាន់ឪពុកគាត់ នៅក្នុងបរិវេណបន្ទាយក្តីមានវត្តមួយ ប៉ុន្តែចូលដល់ជំនាន់គាត់កាលនៅក្មេងគេរើវត្តនោះហើយ។ កាលគាត់នៅក្មេង គាត់បានឃើញជើងសសររបស់ព្រះវិហារនៅសល់នៅឡើយ។ អិប្រុសរបស់គាត់ធ្លាប់បួស

រូបលេខ១៦. កោដ្ឋនៅប្រាសាទភ្នំជីសូរ (រូបថត ៖ អាំង ជូលាន)

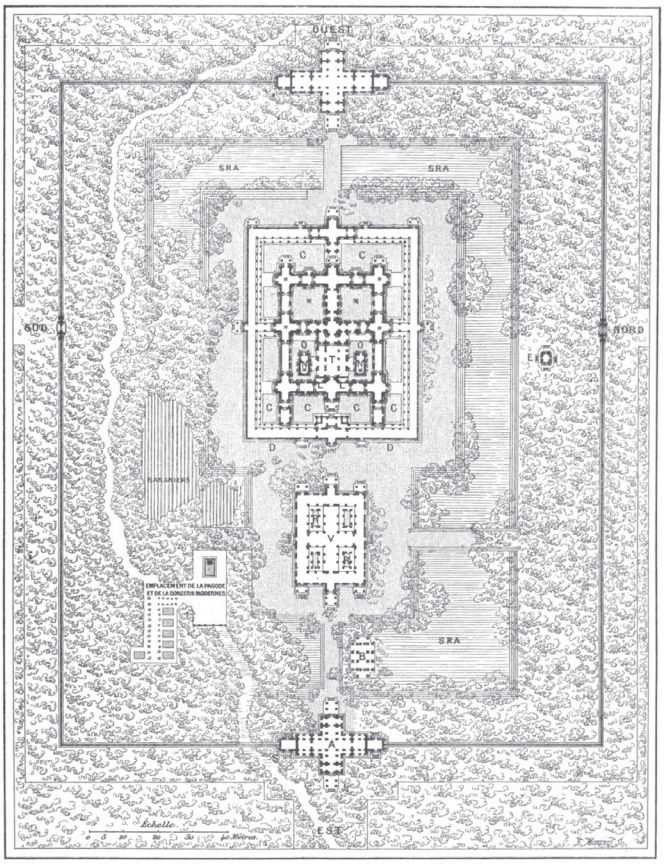
រូបលេខ១៧. យាយភាជ (រូបថត ៖ អាំង ជូលាន)

នៅវត្តបន្ទាយក្តី ក្រោយមកបានប្តូរទៅគង់នៅវត្តក្នុងបរិវេណប្រាសាទអង្គរវត្ត។

ទាក់ទងនឹងវត្តដែលធ្លាប់មាននៅក្នុងបរិវេណបន្ទាយក្តី ដែលលោកយាយភាជបានរៀបរាប់នេះ ក៏មានសរសេរនៅក្នុងកំណត់ត្រារបស់ជនជាតិបារាំងដែលបានមកអង្គរនៅដើមទសវត្សរ៍១៨៩០ដែរ។ ជនជាតិបារាំងនោះឈ្មោះ Albert Tissandier គាត់បានរៀបរាប់អំពីស្ថានភាពរបស់វត្ត និងប្រាសាទ។ គាត់សរសេរថាមានវត្តព្រះពុទ្ធសាសនាទ្រុឌទ្រោមមួយ។ នៅទីនោះមានខឿនសមល្មមមួយដែលព្រះសង្ឃសំពះសូត្រធម៌នៅពីមុខព្រះពុទ្ធរូប។ លោកសង្ឃទាំងនោះគង់នៅក្នុងកុដិចាស់ប្រក់ពីស្លឹកត្នោត។[៤៦] លោក Albert Tissandier បានគូរប្លង់របស់បន្ទាយក្តីដែលនៅក្នុងប្លង់នោះគាត់បានសរសេរពាក្យ “Monastère de Ekdey” បើជាភាសាខ្មែរ “វត្តឯកក្តី” ហើយមានសរសេរពាក្យ “ទីកន្លែងវត្ត និងកុដិលោកសង្ឃ” នៅកន្លែងដែលយើងហៅខឿនព្រះវិហារនោះ (រូបលេខ១៨)។

យើងយល់ថាលោក Tissandier ប្រើឈ្មោះ “វត្តឯកក្តី” សម្រាប់ជាឈ្មោះប្រាសាទរបស់បន្ទាយក្តី ប្រហែល

[៤៦] Tissandier 1896: 38-42។



រូបលេខ១៨. ទីតាំងព្រះវិហារ និងកុដិនៅបន្ទាយក្តី គូរដោយលោក Albert Tissandier (Tissandier 1896)

ជាគាត់ច្រឡំទៅនឹងឈ្មោះរបស់វត្តផ្ទាល់ ឬក៏ជាពាក្យដែលព្រះសង្ឃហៅអង្គឯងថា "ឯកក្តី"។ "ឯកក្តី" ក្លាយមកពីពាក្យ "អាយក្តី ឬអាចក្តី" ដែលព្រះសង្ឃហៅអង្គឯងកាលពីជំនាន់ដើម បើសព្វថ្ងៃគឺ "អាត្មាអញ"។[៦៧] *លើសពីនេះ នៅក្នុងអត្ថបទរបស់គាត់ គាត់ប្រហែលហៅឈ្មោះ* "Bon-taï" (*បន្ទាយ*) *ច្រឡំហៅឈ្មោះភូមិមួយដែលស្ថិតនៅក្បែរប្រាសាទនាពេលនោះ។ ពីព្រោះឈ្មោះ "បន្ទាយក្តី" នេះអ្នកស្រុកនៅម្តុំនោះហៅជាយូរមកហើយ។ បើយើងពិនិត្យលើកំណត់ត្រារបស់លោក ហង់រី មូហូត ដែលបានមកអង្គរនៅឆ្នាំ១៨៦០ មុនលោក* Tissandier *ទៀតនោះបានសរសេរថា* "Pontéy Kedey" *ដែលជាសូរមកពី "បន្ទាយក្តី"។*[៦៨] *សូម្បី "ប្រាសាទតាព្រហ្ម" ដែលអ្នកស្រាវជ្រាវនិយមហៅសព្វថ្ងៃ តាមពិតទៅលោក ហង់រី មូហូត បានសរសេរ "បន្ទាយតាព្រហ្ម" ហើយឈ្មោះនេះអ្នកស្រុកនៅតែហៅរហូតមកដល់សព្វថ្ងៃ។*

ទាក់ទងនឹងការបញ្ចុះកោដ្ឋនៅខឿនព្រះវិហារក្នុងបរិវេណបន្ទាយក្តីលោកយាយតាជបានរៀបរាប់ថា

[៦៧] Pou 2017: 11។

[៦៨] Mouhot 1864 (II): 13។

សម្រាប់កោដ្ឋរបស់ឪពុកគាត់បានយកទៅបញ្ចុះនៅអង្គរវត្ត កាលពីឆ្នាំ១៩៨០ បន្ទាប់ពីចប់របប ប៉ុល ពត។ ប៉ុន្តែសាច់ញាតិគាត់ខ្លះបានយកកោដ្ឋទៅបញ្ចុះនៅក្នុងបន្ទាយក្តី។ កាលពីដើមទសវត្សរ៍១៩៧០ និងទសវត្សរ៍១៩៨០ អ្នកភូមិនៅរហាល និងស្រះស្រង៉ែបានយកសពទៅកប់នៅគោកខ្មោច ដែលស្ថិតនៅខាងលិចភូមិ (ទីកន្លែងដែលមានប្រាសាទ អ្នកស្រុកហៅ“ប្រាសាទគោកខ្មោច” ហើយសម្រាប់ឈ្មោះ គេប្រើផ្លូវការ គឺប្រាសាទក្តីសូរ ឬកុដិស្វរ) (រូបលេខ១៩)។

យោងតាមការរៀបរាប់របស់លោកយាយ កាលពេលគេទម្លាក់គ្រាប់នៅដើមទសវត្សរ៍១៩៧០ អ្នកភូមិខ្លះបានគេចខ្លួនទៅជ្រកនៅបន្ទាយតាព្រហ្ម និងខ្លះទៀតគេចទៅនៅបន្ទាយក្តី។ ពេលចប់របប ប៉ុល ពត អ្នកភូមិនៅរហាលខ្លះបានយកជាតុទៅកប់នៅក្នុងបន្ទាយក្តី។ ចាប់ពីដើមទសវត្សរ៍១៩៩០ ថ្វីត្បិតតែគេហាមមិនឲ្យយកជាតុទៅកប់នៅប្រាសាទក្តី ប៉ុន្តែអ្នកភូមិតែងតែរៀបពិធីបង្សុកូលនៅកន្លែងខឿនព្រះវិហារនោះរៀងរាល់ឆ្នាំនៅពេលភ្ជុំបិណ្ឌ និងពេលចូលឆ្នាំខ្មែរ (រូបលេខ២០)។

រូបលេខ១៩

រូបលេខ២០

សេចក្តីបញ្ចប់

ដូចបានរៀបរាប់ខាងលើ តាមរយៈសិលាចារឹក កំណាយបុរាណវិទ្យា និងការសាកសួរអ្នកស្រុក យើងអាចបង្ហាញថា បន្ទាយក្តីជាទីគោរពប្រតិបត្តិជំនឿដែលពុំចេះដាច់តាំងពីដើមសម័យអង្គរមក។ ទីតាំងម្តុំបន្ទាយក្តីបានក្លាយជាភូមិស្រុក ដោយមានជាទីគោរពបូជាតាំងពីដើមស.វ.ទី៩ ដូចមានចារនៅក្នុងសិលាចារឹកជាតឹកតាង។ បន្ទាប់មកហាក់បានក្លាយទីប្រជុំជនកាន់តែធំ នេះបើយោងតាមសិលាចារឹកប្រាសាទបាតជុំ (K. 266 និង K. 267) ដែលចារនៅស.វ.ទី១០។ សិលាចារឹកប្រាសាទបាតជុំនិយាយអំពី ការរៀបពិធីសាសនាផ្សេងៗជាច្រើននៅទីនោះ និងមានជីកស្រះមួយយ៉ាងធំ (ស្រះស្រង៉ែ)។ បន្ទាប់មកដូចដែលយើងដឹង គេបាន

សាងប្រាសាទព្រះពុទ្ធសាសនាមហាយានយ៉ាងធំនៅចុងស.វ.ទី១២ នោះគឺ បន្ទាយក្តីនេះឯង។

ចាប់ពីស.វ.ទី១៥ ថ្វីត្បិតរាជធានីបានប្តូរទៅភាគខាងត្បូងក្តី ប៉ុន្តែអ្នកស្រុកនៅតែប្រើប្រាស់បន្ទាយក្តីជាទីកន្លែងសម្រាប់គោរពជំនឿសាសនាដដែល។ ពេលគេប្តូរមកគោរពព្រះពុទ្ធសាសនាថេរវាទចាប់ពីស.វ.ទី១៤ រៀងមក ទីតាំងបន្ទាយក្តីបានក្លាយជាទីគោរពប្រតិបត្តិសម្រាប់ពុទ្ធសានិក។ អ្នកស្រុកបានសាងជាព្រះវិហារនៅក្នុងបរិវេណបន្ទាយក្តីប្រហែលនៅរវាងស.វ.ទី១៥ ឬ១៦។ លើសពីនេះ យោងតាមកំណត់ត្រារបស់លោក Albert Tissandier និងការរៀបរាប់របស់លោកយាយកាជនៅស.វ.ទី១៩ បន្ទាយក្តីនៅតែមានវត្តព្រះពុទ្ធសាសនាដែលមានទីតាំងនៅព្រះវិហារនោះដដែល។ វត្តនោះអាចប្រើប្រាស់រហូតយ៉ាងហោចណាស់មកដល់ទសវត្ស ១៩២០ដែរ។ ប្រសិនបើគ្មានការរៀបចំអភិរក្សប្រាសាទនៅតំបន់អង្គរទេនោះ ម្ចាស់អ្នកស្រុកនិងព្រះសង្ឃនៅតែរក្សាវត្តនោះរហូត។

លើសពីនេះ របកគំហើញពីការធ្វើកំណាយនៅខឿនព្រះវិហារ ដូចជាកោដ្ឋដាក់ធាតុដែលជាភាជន៍មានកាលបរិច្ឆេទនៅស.វ.ទី១៦និង១៧ ហើយនិងកោដ្ឋដែលគេយកមកបញ្ចុះនៅទសវត្ស១៩៨០ បានបញ្ជាក់បន្ថែមយ៉ាងច្បាស់ថាបន្ទាយក្តីជាទីគោរពសក្ការៈ និងប្រតិបត្តិពុំចេះដាច់។ ទាំងនេះបង្ហាញឲ្យយើងដឹងអំពីការវិវត្តន៍ប្រវត្តិសាស្ត្រ និងមានស្រទាប់វប្បធម៌ច្បាស់លាស់នៅទីប្រាសាទនេះ។ ជាការពិតណាស់ ការប្រតិបត្តិប្រពៃណីនៃការយកកោដ្ឋ ឬធាតុមកបញ្ចុះនៅទីប្រាសាទចាប់ផ្តើមពីសម័យកណ្តាលនៅរវាងពីស.វ.ទី១៥ ឬទី១៦មកក្តី ប៉ុន្តែគំនិតខ្មែរនៃការភ្ជាប់ទៅនឹងទេពកាលពីសម័យអង្គរនៅតែបន្តជានិមិត្តរូបនៅក្នុងចិត្ត។ ពីព្រោះប្រាសាទនៅសម័យអង្គរសាងឡើង ដើម្បីឧទ្ទិសដល់ទេពក្នុងព្រហ្មញ្ញសាសនា និងព្រះពុទ្ធសាសនាមហាយាន ហើយលើសពីនេះទៀតប្រាសាទជានិមិត្តរូបនៃទីស្ថានរបស់ទេពដែលក្រោយមកចាប់ពីសម័យកណ្តាលប្រាសាទបានក្លាយជាទីគោពបូជាសម្រាប់អ្នកស្រុក។ យើងអាចនិយាយបានថា ប្រាសាទជាទីកន្លែងដែលនៅជាប់នឹងសហគមន៍ជានិច្ច ឬប្រាសាទមានទំនាក់ទំនងច្រើនបែបយ៉ាងជាមួយនឹងអ្នកស្រុកចាប់តាំងពីសម័យកណ្តាលរៀងមក។

ដូច្នេះហើយ ការសិក្សានេះមិនត្រឹមតែបង្ហាញថាមានសហគមន៍អ្នកស្រុកនៅបន្តប្រើប្រាស់បន្ទាយក្តីពុំចេះដាច់ និងឲ្យយើងដឹងអំពីការវិវត្តន៍នៃប្រវត្តិសាស្ត្ររបស់បន្ទាយក្តីប៉ុណ្ណោះទេ ប៉ុន្តែវាអាចឲ្យយើងយល់អំពីបរិបទទូទៅនៃប្រវត្តិសាស្ត្រអង្គរទាំងមូល។ យើងក៏អាចយល់ដឹង ឬនិយាយបានថាសម័យកណ្តាល គឺជាស្ពាននៃការភ្ជាប់រវាងសម័យបុរាណ និងសម័យថ្មីដែរ។ លើសពីនេះ យើងក៏អាចអះអាងថាការប្រើពាក្យ ឬគំនិតដែលថា “ខ្មែរបោះបង់ចោលអង្គរ” ឬ “ខ្មែរភ្លេចអង្គរ” នោះ ពោលគឺពុំត្រឹមត្រូវទេ ហើយគួរតែបំបាត់នូវគំនិតបែបនោះ។

ថ្វីត្បិតតែព្រះរាជាខ្មែរបានប្តូររាជធានីពីអង្គរទៅភាគខាងត្បូងក្តី ប៉ុន្តែអារ្យធម៌អង្គរ នៅតែបន្តនៅក្នុងគំនិតរបស់ខ្មែរ ដោយគោរពប្រតិបត្តិជំនឿ និងប្រពៃណីតាមបែបផែនថ្មីនៃព្រះពុទ្ធសាសនាថេរវាទ។ ម្យ៉ាងទៀតព្រះរាជាក្រោយមកក៏ពុំបានបោះបង់ចោលអង្គរទាំងស្រុងដែរ ដូចមានជាឧទាហរណ៍ស្រាប់នៅស.វ.ទី១៦ ព្រះមហាក្សត្របានយាងត្រឡប់ទៅអង្គរ និងបានបំពេញព្រះរាជកិច្ចមួយចំនួន។ ឧទាហរណ៍មួយទៀតដែល

បង្ហាញយ៉ាងច្បាស់អំពីឈ្មោះរាជធានីស្រីសន្ទរ នោះមិនមែនជាការចៃដន្យទេដែលគេដាក់ឈ្មោះដូច្នោះ ពោលគឺគេនៅរក្សា នៅចងចាំឈ្មោះរបស់រាជធានីនៅអង្គរ "ស្រីយសោធរ" នោះឯង។ សង្ខេបដោយខ្លី ពោលគឺនៅក្នុងគំនិតខ្មែរ អង្គរជាព្រលឹង ជាមរតក និងជាអត្តសញ្ញាណរបស់ខ្មែរជានិច្ច។

កិច្ចសហប្រតិបត្តិការ និងអ្នកចូលរួមកំណាយ

សាកលវិទ្យាល័យសូហ៊ីយ៉ាបំពេញកិច្ចការធ្វើកំណាយស្រាវជ្រាវនៅបន្ទាយក្តីនេះអាចដំណើរការទៅបានល្អ គឺដោយមានកិច្ចសហប្រតិបត្តិការជាមួយអាជ្ញាធរអប្សរា សាកលវិទ្យាល័យភូមិន្ទវិចិត្រសិល្បៈ និងក្រសួងវប្បធម៌និងវិចិត្រសិល្បៈ។

ខាងក្រោមនេះជាសមាជិកដែលបានចូលរួមនៅក្នុងកំណាយស្រាវជ្រាវកាលពីខែសីហា ឆ្នាំ២០១៩ ៖

១. មជ្ឈមណ្ឌលអាស៊ីសិក្សាស្រាវជ្រាវនិងបណ្តុះបណ្តាលធនធានមនុស្សនៃសាកលវិទ្យាល័យសូហ៊ីយ៉ា
- លោកស្រី សាស្ត្រាចារ្យ ម៉ារុយ ម៉ាសាកុ (សាស្ត្រាចារ្យនៃសាកលវិទ្យាល័យសូហ៊ីយ៉ា)
- លោក មីយ៉ាម៉ូតុ យ៉ាសឺហារឺ (ប្រធានអភិរក្សនៃក្រុមប្រឹក្សាអប់រំរបស់ក្រុងអូសាកា)
- លោក ឈឿន វុទ្ធី (បុគ្គលិកផ្នែកបុរាណវិទ្យានៃមជ្ឈមណ្ឌល)
- លោក ហាវ៉ាយ៉ាម៉ា តាកាស៊ី (និស្សិតអនុបណ្ឌិតនៃសាកលវិទ្យាល័យសូហ៊ីយ៉ា)
- លោក ញឹម សុធាវិន្ទ (អ្នកស្រាវជ្រាវនៃសាកលវិទ្យាល័យសូហ៊ីយ៉ា)

២. អ្នកជំនាញអាជ្ញាធរអប្សរា
- លោក ថូ ថុន (អ្នកជំនាញបុរាណវិទ្យា)
- លោក មាស ឫទ្ធីវ៉ាថេត (អ្នកជំនាញបុរាណវិទ្យា)

៣. អ្នកជំនាញអាជ្ញាធរព្រះវិហារ
- លោក កិន កក្តី (អ្នកជំនាញបុរាណវិទ្យា)

៤. និស្សិតនៃមហាវិទ្យាល័យបុរាណវិទ្យា, សាកលវិទ្យាល័យភូមិន្ទវិចិត្រសិល្បៈ
- កញ្ញា អ៊ឹង មរកត (បញ្ចប់ថ្នាក់បរិញ្ញាបត្របុរាណវិទ្យា)
- កញ្ញា កុយ មុីចៀន (និស្សិតឆ្នាំទី៤)
- លោក លក បញ្ញា (និស្សិតឆ្នាំទី៣)
- កញ្ញា ងួន ចាន់ដារីយ៉ា (និស្សិតឆ្នាំទី២)
- លោក ថន លីមសាយ (និស្សិតឆ្នាំទី២)

៥. អ្នកភូមិរហាលចំនួន៥នាក់

ឯកសារយោង

ឯកសារជាភាសាខ្មែរ

ជូ ចុន, ធាយ រចនា, មូល គំនិត. ២០១៤. កោដ្ឋតម្កល់ជាតុបុពណានៅប្រាសាទលលៃ, អាជ្ញាធរអប្សរ, ៨ទំព័រ (របាយការណ៍)។

ពុទ្ធសាសនបណ្ឌិត. ១៩៦៧-៦៨. វចនានុក្រមខ្មែរ, បោះពុម្ពលើកទី៥, ភ្នំពេញ (ភាគទី១ និង២)។

អាជ្ញាធរអប្សរ

- ២០០១. អង្គរធំ៖ ប្រវត្តិសង្ខេប, នាយកដ្ឋានវប្បធម៌, សៀមរាប។

- ២០០១-២០០២. អង្គរធំ៖ បុពណវត្ថុនៅតាមទីបូជាបច្ចុប្បន្ន, ក្រុមតាមដាន និងចុះបញ្ជីបេតិកភណ្ឌ, នាយកដ្ឋានវប្បធម៌, សៀមរាប (របាយការណ៍មិនបោះពុម្ព)។

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អាជ្ញាធរអប្សរ និងមជ្ឈមណ្ឌលខេមរភាសា (CKS). ២០១៣. សិលាចារឹកអង្គរវត្ត៖ សម័យបុពណ, កណ្តាល, ថ្មី, សៀមរាប។

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LOKEŚVARA (AVALOKITEŚVARA) AND"RĀJADHARMA" IN ANGKOR

Akiko Miyazaki

INTRODUCTION

This paper aims to reveal how Lokeśvara (Avalokiteśvara) was perceived, linked with the royal authority preceding the reign of Jayavarman VII. I will review the inscriptions in which Lokeśvara (Avalokiteśvara) and another name "Trailokyanātha (Lord of the three worlds)" are recorded.

During the reign of Jayavarman VII (1181-1218), Angkor affected the broad area. As if to flaunt its size, radiating Lokeśvara statues[1] (Fig. 1) produced under the reign of the king were installed in large temples far from the royal capital (Miyazaki 2010: Map1). Concerning the distribution of these statues, the vast territory was displayed inside and outside of Angkor. Lokeśvara (Avalokiteśvara) played the role of a tie to connect the central and the local at the frontier of Angkor's location.

These statues were distributed not only in the royal capital, but also in Preah Khan (Kampong Svay, Kampong Thom) and Ta Prohm (Tonle Bati, Ta Keo), Muang Singh in western Thailand, Ratchaburi in central Thailand, and Bin Dinh[2] (Vijaya in Vietnam) (Fig. 2). Lokeśvara (Avalokiteśvara) played the role of the omnipresent deity (viśvarūpī, KVS Part 2, Chapter 2).

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[1] It is based on "Kāraṇḍavyūha-sutra" (KVS), and its characteristic iconography expresses the divinity of Avalokiteśvara, who has the hair pores in which " hundred buddhas reside in each one" (Part 2 Chapter 2)(Studholme 2002: 138). KVS, which describes the compassion of Avalokiteśvara who relieves the sorrows of the people was created at the beginning of the 7th century in northwest India (Mette1997). It is in Sanskrit prose, and the Guna Kāraṇḍavyūha-sūtra of the verse is in Sanskrit (Tsukamoto ed. 1989: 14-145). The prose edited by Samasrami uses the 12th century manuscript of Nepal (Vaidya 1961), and the text edited by Mette uses the manuscript of Gilgit of AD 630 (Mette1997). It also has a Chinese text, namely the 仏説大蔵荘厳宝王経, (translated by 天息災).

[2] Woodward proposes a new construction that radiating Lokeśvara is Jayavuddhamahānātha (Woodward 1994/1995).

There are previous studies about Lokeśvara (Avalokiteśvara) in Southeast Asia, Finot (Finot 1925a), Boisselier (Boisselier 1964) and Chutiwongs (Chutiwongs 2002). However, they focus primarily on the iconographic interpretation of the Lokeśvara (Avalokiteśvara) image itself. These are insufficient to consider the social background that led Jayavarman VII to dedicate the statues of Lokeśvara (Avalokiteśvara). In addition, since the studies do not intend to understand Lokeśvara (Avalokiteśvara) in the relation to the royal authority, they do not cover the inscriptions that record these relations.

I will review the inscriptions[3] before Jayavarman VII to clarify the changes of understanding Lokeśvara (Avalokiteśvara) in Angkor.

Fig. 1 Radiating Lokeśvara (Jessup 1997: 315)

Fig. 2 Radiating Lokeśvara (Boisselier 1963: fig. 223)

[3] For understanding recent developments of inscription, see Matsuura (2018).

LOKEŚVARA (AVALOKITEŚVARA) IN ANGKOR INSCRIPTIONS BEFORE JAYAVARMAN VII

This deity was recorded in the inscriptions of Angkor by the names "Avalokiteśvara" or "Lokeśvara". The latter is particularly prevalent in Southeast Asia[4]. According to my research, although Lokeśvara has a higher frequency, it is impossible to clarify the difference in their use and meaning. Therefore, this paper regards both Avalokiteśvara (Avalokita) and Lokeśvara (Lokeśa) appearing in the inscriptions of Angkor without distinction. Also, as mentioned in the inscription of Prasat Ta Kam (K.244), it is considered that Lokeśvara (Avalokiteśvara) already had "another name" from the pre-Angkor period, which I will mention below.

The inscriptions during the pre-Angkor period, record the name of Lokeśvara (Avalokiteśvara), albeit slightly. These two inscriptions are as follows.

Prasat Ampil Rolum (K. 163, 7-8th century, KH, Kampong Thom)

Nine lines of Old Khmer inscriptions are engraved at the doorjamb of the north tower (Cœdès 1937-1966 vol.6: 100-101). At the beginning, it states that Poñ Prajñācandra had given a servant called "kñuṁ" to "Buddha, Maitreya, Avalokiteśvara" (lines 1 to 3).

Prasat Ta Kam (K.244, AD 791, SK, Siem Reap)

In a two-line inscription on the doorjamb of the sanctuary, it records that Lokeśvara is deemed "jayati" (victory) and has another name "jagadīçvara" (Ibid. vol. 3: 89).

During the Angkor period, most inscriptions that included the name of Lokeśvara (Avalokiteśvara) before the Jayavarman VII are dated from the mid-10th century to the early 11th century. This era is said to be a period of revolutionary social changes. In particular, pertaining to Rājendravarman II (944-968), Jayavarman V (968-1000), and Sūryavarman I (1002-1050), Vickery (1985) and de Mestier (de Mestier 1970) point out social changes through the research on inscriptions. It can also be considered an important turning point from the perspective of studies about Lokeśvara (Avalokiteśvara) (Miyazaki 2014). These are ten inscriptions as follows.

Beng Vien (K.872, mid-10th century, SK, Siem Reap)

This inscription is recorded on the doorjamb of south tower (Cœdès Ibid. vol. 5: 97−104). Beginning with compliments to Buddha, Lokeśvara, Prajñāpāramitā, it praises Rājendravarman's victory over the Cham compared to Rāmāyana, records the construction of East Mebon in Yaśodharatatāka and offerings. In the stanza 3, Lokeśvara is described as "four-

[4] Iwamoto says that Lokeśvara was the name which was used in Nepal in a short period. We can find the name Lokeśvara which is another name of Śiva in the inscription (AD 759) of Jayadeva(Iwamoto 1978: 209-210).

handed", and likened to Īśvara and Viṣṇu.

Bat Chum (K.266, AD (953/960, SK, Siem Reap)

This inscription of 24 stanzas is recorded on the left and right of doorjambs of the southern tower (Cœdès 1908: 213-252). From the beginning, there is a tribute to Buddha, Lokeśvara, Vajrapāṇi, Lakṣmī. It praises Lokeśvara ("jayati," victory) as "four-handed," and esteems as a god who establishes (rūḍhas) world happiness (lokahitārtha). In the inscription in Old Khmer, I cannot discover the translation of this stanza.

Vat Kdei Car (K.157, AD 953, SK, Kampong Thom)

This is a plate-like inscription; the A and B sides of the front and back are written in Sanskrit, and the sides c and d are written in Old Khmer (Cœdès 1937-1966 vol. 6: 123-127). Beginning with a tribute to Harṣavarman II (942-944), the gift (virgin land) given by the king to the king's courtier, Vīrendravikhyāta, is recorded. The dedication of Lokeśa by Vīrendravikhyāta is mentioned (A side, stanza 3-7, SK). After this dedication is a bronze statue of Lokeśvara by Rājendravarman (B side, stanza 13, SK), the offering being the image of Avarokiteśvara (B side, stanza 14, SK) . Only the stanza 14 has changed rhythm, and it seems that it was intended to emphasize the verse. In the inscription in Old Khmer, I cannot determine the translation of these stanzas.

Vat Sithor (K.111, 2nd half of the 10th century, SK, Kandal)

This is a pillar-shaped inscription consisting of 25 stanzas each on the A-D surface (ibid. Vol. 6: 195-211). Beginning with a compliment to Jayavarman V, commemorating the High Priest Kīrtipaṇḍita's Buddhist reformation, this inscription lists his accomplishments. From the B side, stanzas 44 to 46, dedicating to Prajñāpāramitā. It describes how Kīrtipaṇḍita dedicated these new statues, Vajrin and Lokeśa.

Cikreng（K.417, AD 970, SK, Siem Reap）

An inscription consisting of nine stanzas is block-shaped (ibid. Vol. 2: 48−50). Cœdès translates the first stanza, "The dust of Lokeśvara's feet is transformed to the water." It can be said that he had taken Lokeśvara as a god who "jayati" (victory) the fire of hell. From the second verse onward, offerings by Umā, the daughter of Saṅgrāma who is the General of Udayādityavarman, and his brother, are dedicated to Lokeśa and Avalokita (stanza 4: Lokeśa, stanza 8: Avalokita).

Cikreng East（K. 168, AD 972, KH, Siem Reap）

This inscription is composed of 16 lines of Old Khmer written in the doorjamb of the temple (Ibid. Vol. 6: 168−169). It depicts the dedication of various offerings to Lokeśvara and

records both names of Ekādaçamukha and Bhagavatī from the first line to the fourth.

Banteay Neang (K.214, AD 981, SK/KH, Banteay Meanchey)

This is a stone-plate-shaped inscription, which presents the image of Lokeśvara (Ibid. Vol. 2: 202-206). In stanza 2, the statement "Jina Amitābha is placed on the head of Lokeśvara" is recognized. In addition, it can be seen that Prajñāpāramitā is worshiped as well as Lokeśvara. The latter part of the inscription states that Lokeśvara and Buddha Mother (considered Prajñāpāramitā) were dedicated to.

Matsuura, who rereads this inscription, conveys about Jagadīśvara recorded in stanza 5, "In the pre-Angkor Prasat Ta Kam inscription" (see K.244 above); it is used as another name of Lokeśvara. Similar to Prasat Ta Kam, it probably refers to Lokeśvara. If so, as the grandfather who first dedicated to Jagadīśvara served Indravarman I (877−889), the faith in Lokeśvara has taken root in this area since at least the late 9th century (Matsuura 2019). Buddhism can be seen as being accepted from an earlier stage in the province.

Thma Puok（K.225, AD 989, SK, Banteay Meanchey)

This is a plate-shaped inscription, beginning with prayers to Buddha, Prajñāpāramitā, Lokeśvara, Vajrin, and Maitreya (Cœdès 1937−1966 vol. 3: 66−69). Following a tribute to Jayavarman V, Padmavairocana, a king's expert, erected statues of the Buddha Mother (Prajñāpāramitā), Indra, Maitreya, Buddha, Lokeśvara, and Vajrin (stanza 11).

Tuol Prasat (K.158, AD 1003, SK, Preah Vihear)

This is a plate-shaped inscription (Ibid. Vol. 2: 97-114). The B side (in SK) records a tribute to Jayavīravarman, and the dedication of the five lands that Sahadeva was given by the king to the statues of Liṅgapureśvara, Buddha and Lokeśvara.

Prasat Beng（K.230, SK/KH, AD 1026, Battambang）

This is a plate-shaped inscription (Ibid. Vol. 6: 241−246). The side A begins with a tribute to Trailokyanātha (Lord of the three worlds) (Lokeśvara), Vajrapāṇi, praises Sūryavarman I (in Sanskrit). Lines 14−18 on side C (in Old Khmer) record a senior official, Madhurapaṇḍita and dedicate a statue of Lokeśvara, named Trailokyanātha. The 20th line states that such a dedication was performed as the "rājadharmma".

Summarizing the above 12 inscriptions, in the pre-Angkor period, although no compliment on the royal authority is found, Avalokiteśvara was worshiped like Buddha and Maitreya. In addition, another name of Lokeśvara had already been recorded. In the inscriptions during the Angkor period, Vat Kdei Car (K.157), Vat Sithor (K.111), Thma Puok (K.225), Prasat Beng (K.230), following the tribute to the king, it is recorded that the statues were dedicated by

senior officials and monks. These inscriptions mention the dedication of the Avalokiteçvara or Lokeśvara statues with honoring high officials and monks' results. They record their worship to not only Avalokiteçvara but also Buddhism as a whole, including Buddha and Prajñāpāramitā.

In the inscription of Bat Chum (K.266), it records that Avalokiteçvara makes the happiness of the world, has the role of "victory (overcome)." The inscription of Cikreng (K.417) records that "Avalokiteçvara overcomes the fire of hell." This is a typical characteristic of Avalokiteśvara and Lokeśvara. The role of "victory (overcome)" was already recorded by pre-Angkor's Prasat Ta Kam (K.244). In the reign of Jayavarman VII, several inscriptions state the role of "jayati (victory)," which is the most important role of Lokeśvara and Avalokiteśvara in Angkor.

Beng Vien (K.872) and Bat Chum (K. 266) describe that he has "four arms." The description of Banteay Neang (K. 214), such as "Jina Amitābha is placed on the head of Lokeśvara," mentions the physical characteristics of Lokeśvara. These descriptions influenced Khmer statues. Especially for Beng Vien (K.872), by comparing to the Īśvara and Viṣṇu, it helps to recognize the body of Lokeśvara, which is originally invisible.

The distribution of the inscriptions is scattered around Siem Reap, often found outside of the royal capital. As this can be seen in Vat Kdei Car (K.157) and Tuol Prasat (K.158), these local inscriptions relate to that the king grants local land to a high priest and a senior official who believe in Buddhism. This is probably due to the development of undeveloped land (Vat Kdei Car, K. 157). These movements, recorded in the mid-10th and early 11th centuries, may be the result of the agreement of the king's intent to expand control over the frontier with the intent of higher priests and influential persons to expand Buddhism.

As far as I perused the inscriptions about Lokeśvara and Avalokiteśvara that appeared from Rājendravarman II to Sūryavarman I, a period of social change in Angkor, the consequence of the series of changes is recorded in the inscription of Prasat Beng (K.230). In this inscription, the act of dedication of Lokeśvara is described as "rājadharmma" by Sūryavarman I. In the early inscriptions, despite recording the tribute to the king, the dedications of the Lokeśvara statue are no more than the acts by the senior officials and the high priest. This is, as Matsuura says, "It (the inscription of Prasat Beng) suggests that the involvement of the royal authority in building the Lokeśvara statue was deeper than before" (Matsuura 2019).

As discussed above, according to the inscription, in the pre-Angkor and early Angkor, these inscriptions show the recognition of the special quality and the physical characteristic of each Buddhist deities, and Lokeśvara was worshiped by high officials and local influential persons. Although the relationship between the king and Lokeśvara is sparse, from the reign of Sūryavarman I, the expansion of Buddhism was gradually incorporated into the king's achievements as the "rājadharmma".

WHO IS TRAILOKYANĀTHA?

As mentioned above, Lokeśvara and Avalokiteśvara have other names: "jagadīçvara" (K. 244, K. 214) and "Trailokyanātha (Lord of the three worlds)" (K. 230), respectively. I omit the details of "jagadīçvara," since no changes of use could be found in Angkor.

In this chapter, about "Trailokyanātha," another name of Lokeśvara, I clarify how the use of this naming spread in Angkor, and how the character of Lokeśvara was recognized in Angkor.

There are nine inscriptions which record "Trailokyanātha." I consider the "Trailokyanātha" as a proper noun, and mention each inscription in chronological order, as follows.

Bung Ke (K. 495, AD 886, SK, Yasothon, Thailand)

After the mention of Śrī Indravarman, this inscription records "by Somāditya, sakalamunipates named Trailokyanātha was dedicated" (in 2-4th line) (Seidenfaden 1922: 62-64). It is the oldest inscription that mentions Trailokyanātha. In this inscription, Trailokyanātha is another name for "Munis" (Buddha). I cannot determine the translation of these lines in Old Khmer.

Prasat Keo (Ta Keo) (K. 534, AD 893, SK, Siem Reap)

This inscription begins with a praise to Jayavarman V, Viṣṇu, Brahma, Śiva, and Mahendrārimathana, who is the priest of the King (Finot 1925b: 297-304). Stanza 14 of side B refers to the domain. According to this stanza, Trailokyanātha means the southern domain. This inscription does not have the translation in Old Khmer.

Phimeanakas (K.291, AD 910, SK/KH, Siem Reap)

The Sanskrit inscription (stanza 10, south doorjamb) mentions that "(Śrīsatyāśraya) has erected Mādhava (Kṛṣṇa, Viṣṇu) under the name of Śrī Trailokyanātha" (Cœdès Ibid vol. III: 199). In Old Khmer inscription (in the 1-2nd line), it mentions same meaning with in Sanskrit.

Prasat Kravan (K. 270, AD 921, SK/KH, Siem Reap)

This inscription is on the south doorjamb of the central sanctuary of Prasat Kravan. Stanzas 3-5 mention that Śrī Trailokyanātha was erected by Mahīdharavarman (Ibid vol. IV: 68). The inscription on the north doorjamb (in Old Khmer, lines 1-2 and 26) states that Mahīdharavarman and Jayavīravarman delivered the party (of slaves, vnvak) and the servants (anak) over to Trailokyanātha. Since the central sanctuary of Prasat Kravan is for Viṣṇu, Trailokyanātha identifies with Viṣṇu.

Angkor Vat (K. 529, 10-11th century[5], Siem Reap)

This is a short inscription recorded above Buddha relief "Trailokyanāthādhipati" (Fig.3) (Finot 1925b: 406).

Tuk Cum (K. 238, AD 949, KH, Siem Reap)

This inscription refers that Bajrendrāchārya and Vāp Dhū erected Trailokyanātha (Ibid vol. VI: 119). Cœdès refers that this Trailokyanātha is Lokeśvara, alike the inscription of Prasat Beng (K.230). This inscription is written only in Old Khmer. No translation in Sanskrit is found.

Prasat Phum Pu (K. 885, AD 968, KH, Siem Reap)

Lines 4 and 5 mention that the paddy field was dedicated to Trailokyanātha (Ibid. vol. V: 150).

Banteay Neang (K. 214, AD 981, SK/KH, Banteay Meanchey)

The part written in Old Khmer, lines 12-14, side B, records that Ācārya Tribhuvanavajra and his family dedicated the offerings to V. K. A. Trailokyanātha (Ibid vol. 2: 202-206). The part written in Sanskrit (side A) records that Ācārya Tribhuvanavajra dedicated the offerings to Lokeśvara. Following these descriptions, it says that Trailokyanātha (side B) corresponds with Lokeśvara (side A).

Prasat Beng (K.230, AD 1026, KH, Battambang)

As mentioned above, this inscription identifies Trailokyanātha with Lokeśvara.

From the above, in early Angkor, Trailokyanātha was identified with Buddha and Viṣṇu. In addition, sometimes it simply means an

Fig. 3 K.529 (Finot 1925: Pl. XXXI)

[5] Cœdès mentioned "14th century?" (Ibid. vol. 8: 163)

area. From the 10th century, Trailokyanātha was connected to Lokeśvara. These uses linked with Lokeśvara are often seen in the local area and limited to the latter half of the 10th to the first half of 11th century.

In the royal capital of Angkor, in Phimeanakas (K.291) and Prasat Kravan (K. 270), Trailokyanātha established as Viṣṇu. After these oaths, Lokeśvara was recognized as Trailokyanātha. This process which explains the divinity of Lokeśvara imitating with Viṣṇu is already recorded in the inscription of Beng Vien (K.872).

Final Remark

As stated in the introduction, Jayavarman VII dedicated Lokeśvara (Avalokiteśvara) statues in the frontier of Angkor.

According to Schweyer, during the period of Jayavarman VII, the Champa were under the control of Angkor from 1190 to 1220, ending the repeated clashes with Angkor (Schweyer 2007: 67-70). The battle between the two countries is noted in the inscriptions on Phimeanakas (K.485) and Prasat Chrung (K.288).

Jayavarman VII, who won the battle with Champa, offered Vijaya a statue of radiating Lokeśvara (Avalokiteśvara), which would be a tie to Angkor City, and showed the territory in and out. Vijaya's radiating Lokeśvara (Avalokiteśvara) seems to have a meaning that superimposes the divinity of Lokeśvara (Avalokiteśvara) "victory" and Angkor's victory at a new economic center.

We regarded the distributions of inscriptions about Lokeśvara (Avalokiteśvara) as being during the pre-Angkor period and the early 10th to 11th centuries. As a result, during these times, the faith in Lokeśvara (Avalokiteśvara) was limited and had little relation to the royal authority, though Lokeśvara (Avalokiteśvara) was already recognized as a "victory" respect. In many inscriptions, not only Lokeśvara (Avalokiteśvara) but also Buddha and Prajñāpāramitā were mentioned in the same way, indicating consideration for Buddhism as a whole. Undeveloped land was given to the high priests and influential persons, and statues of Lokeśvara (Avalokiteśvara) were dedicated by the senior officials and the high priests, though their actions were limited. As far as the distribution situation is concerned, it can be said that it is a dedication of Lokeśvara (Avalokiteśvara) as a political strategy. It is thought that the relationship between the kingship and Lokeśvara (Avalokiteśvara) was initiated by Sūryavarman I, who dedicated the Lokeśvara (Avalokiteśvara) as the "rājadharmma."

As a result of the grant of land to Buddhists and the spread of "Trailokyanātha" imitating with Viṣṇu, during the first half of the Angkor period, Buddhism expanded from a "spot" to a "field". The royal authority has established a solid foundation with religion. This relationship eventually led Jayavarman VII to having the largest engraving. The dynasty, which has been maintained by gaining a new frontier and continuing to grow larger, reached the limit of expansion in the continent of Southeast Asia after the capture of Vijaya.

Notes: This paper is revised author's paper "Avalokiteśvara and the Frontier of Angkor" (*La Renaissance Culturelle du Cambodge* 30: 69-85. in Japanese).

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A STUDY ON THE STRUCTURE AND SIGNIFICANCE OF THE NORTH SANCTUARY AT WESTERN PRASAT TOP

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Western Prasat Top is located in the south-west quadrant of Angkor Thom. It is west of the Bayon – about 500 meters down the road and 50 meters south into dense forest. The Central, South, and North Sanctuaries, and the *uposathāgāra* or so-called "Buddhist terrace", are divided by *sīmā* stones and, along with a laterite boundary, form the temple precinct (Fig. 1, 2). At the same time, Western Prasat Top is a living temple visited by local worshippers and, occasionally, tourists. In order to study the history of Western Prasat Top, the Nara National Research Institute for Cultural Properties (NRICPN), in collaboration with the Apsara National Authority (APSARA), began surveying in 2003. Our discoveries from the North Sanctuary have contributed new and important evidence to understanding the history of the late Angkor period. We will discuss this unearthed evidence from the perspectives of archaeology, archaeological science, architectural history and iconography.

1. Previous Study on Western Prasat Top

Western Prasat Top was first described in 1908 as "a small building recently discovered" in Angkor Thom (Chronique 1908). Thereafter, an index of ruins and relics throughout the Angkor region was prepared by Edmond Lunet de Lajonquière. Lajonquière assigned the site a number, 486, with later French restorers referring to it as Monument 486 (Lajonquière 1911). Locally, it was known by the Khmer as "Prasat Top Khan Lech", meaning "small temple in the west."

Near the end of January 1918, the Ecole Française d'Extrême-Orient (EFEO) commenced cleaning and repairing Western Prasat Top and the Buddhist terraces north and south of the road leading to the Victory Gate. In 1931, led by Henri Marchal, Western Prasat Top was cleared again.

Henri Marchal, archaeologist, reported on these Buddhist terraces in the Angkor Thom district in his report, along with a schematic map showing multiple Buddhist terraces, including Western Prasat Top (Marchal 1918). Furthermore, Marchal published a paper entitled "Notes on Monument 486" (Marchal 1925), in which he discussed Western Prasat Top from an artistic and architectural standpoint – based on his observations of the previous paper. This paper is the first systematic survey of Western Prasat Top. First of all, Marchal takes note of the decorative lintels found in the Central Sanctuary. The decorative lintels and colonettes in the Central Sanctuary resemble those found at Banteay Srei, with some trimmed down in an unnatural fashion and wedged into the Central Sanctuary. Marchal points out that some other decorative elements, such as pediments and Naga statues, appear to date from a later period.

An attempt at deciphering Inscription K.576, discovered at Western Prasat Top, was made by Louis Finot (Finot 1925). This inscription was on a stone tablet 150 cm high, 40 cm wide and 15 cm thick. According to Finot, there are 23 lines engraved in Sanskrit and Old Khmer. They describe a statue of Vishnu offered in order to secure blessings for the ancestral hall, built for the maternal uncle of Yasovarman I, and indicate that the hall was built between 889 and 908 AD for the enthronement of a prince. This inscription is currently stored at Conservation d'Angkor.

In the early 1970s, Madeleine Giteau published *Iconographie du Cambodge Post-Angkorien* (Giteau 1975). Among her research is a study of Western Prasat Top as a site from the post-Bayon period, which is between the Bayon and post-Angkor periods, including an analysis of the Buddhist iconography. The iconography of the site is attributed to several different periods, with the oldest pediments dating from the late 13th century, and the newest of them not later than the end of the 14th century. The iconography of statues at Western Prasat Top derives from Theravāda Buddhism, which in Giteau's view places them historically at the transition between the Angkor and post-Angkor culture.

After the Khmer civil war, Hiram Woodward discussed the back-and-forth influence between Thailand and Cambodia during the post-Bayon period, which is described as particularly notable in his own works on Thai art and architecture (Woodward 1995, 2002). During the post-Bayon period, the Angkor dynasty came under increasing influence from regional Thai powers which were formerly under the dynasty's control, and Woodward suggests that these influences are visible in the spatial organization of temples and decorative elements thereof. In 1996, Ashley Thompson conducted a study of early Theravāda Buddhist architecture (Thompson 1996). This study discusses Western Prasat Top and acknowledges the importance of the site as both the last work of Angkor period architecture and the last temple to exhibit the triple tower structure.

As we have seen, the volume of existing research on Western Prasat Top is by no

means large. As is true of Angkor studies in general, the majority of research has been from an iconographic and architectural perspective. In addition, study of the post-Bayon period in general has been greatly hampered by the widespread perception among experts that this period represents the decline and fall of the Angkor dynasty.

2. Research and Restoration of Western Prasat Top by NRICPN

According to the previous studies, Western Prasat Top dates, based on the inscriptions, back to the 9th century, and was thought to last until the 15th and 16th centuries in the early post-Angkor period. However, concrete archaeological research was not conducted in this area.

NRICPN began joint research with Cambodia in 1993, after the end of the civil war, focusing on archaeological research, archaeological exploration, conservation science, and human resource development. From 1999 to 2002, the Tani A6 kiln was excavated over two years. We selected Western Prasat Top as the target site for investigation and research in terms of archaeology, architectural history and conservation science in collaboration with APSARA.

In May 2008, a large tree that had been towering over the roof of the Central Sanctuary was cut down. However, this resulted in the tree roots to rot, leading to the roof part of 40 stones collapsing. This caused the Central Sanctuary to rapidly become unstable.

At that time, NRICPN started our consultation with APSARA. As urgent restoration was required we erected – with the full cooperation of JASA (JAPAN-APSARA Safeguarding Angkor) – scaffolding on the Central Sanctuary to prevent it from further collapse. The restoration work started in 2011 with the donation of three heavy vehicles (such as cranes) by a Japanese company, Tadano Ltd. The sequence of restoration work was planned in the order of the south sanctuary, the North Sanctuary, the Central Sanctuary, and the Buddhist Terrace. In the following section, we will focus on the North Sanctuary in detail.

3. Structure of the North Sanctuary – Upper Structure

3.1. Basic Structure of the South and North Sanctuaries

The Central Sanctuary is flanked by a sanctuary to the south and to the north (Fig.1). These South and North sanctuaries consist of a main building frame, upper and lower platforms, and partially collapsed roof elements that had been placed on the ground by EFEO during site clearance in the early 20th century. While the basic structure is the same, there are two major differences when observed in detail. Firstly, each sandstone block in the North Sanctuary is smaller in size (Fig.3). The other major difference is in the door part of the building frame. Both sanctuary's east front are open whilst the north, south and west sides are false doors closed

Fig. 1: Western Prasat Top view from the east.

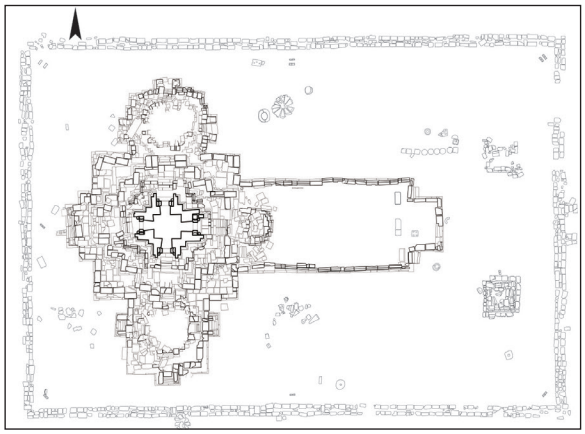


Fig. 2: Plan of Western Prasat Top

Fig. 3: North Sanctuary before restoration.

with sandstone blocks. However, a Buddha image is carved only on the false doors of the North Sanctuary.

Old photographs of the North Sanctuary taken by EFEO in the 1924 show a Standing Buddha image on the false doors on the south and west sides of the building (cliché EFEO, fonds Cambodge INVLU 1481, 1482). However, due to overgrowth by trees and unequal settlement of the foundations, the north side of the building frame had almost completely collapsed making it impossible to know what it looked like on the north side at the time of our restoration works.

In 2003, after more than 80 years on from the work conducted by EFEO, NRICPN

launched its research of Western Prasat Top. At this point, the standing Buddha images on the false doors in the south and west sides of the North Sanctuary, as shown in the old EFEO photographs, were not in their original condition: only the legs below the knees were in their original location. The upper half of the standing Buddha image on the west false door was stored at Conservation d'Angkor in Siem Reap city. However, the upper half of the standing Buddha image on the south face was lost among the thousands of scattered stones on the ground. Therefore, we needed to reconstruct the upper half of the standing Buddha image on the south side – in addition to the reconstruction of the door part on the east and north sides which were invisible in the EFEO archives from the 1920s.

3.2. Characteristics of the Buddha Images on the false doors of the North Sanctuary

As a result of reconstructing the North Sanctuary (Fig. 4), the parts above the knees of the Buddha image on the south false door, which had been scattered and lost, were completely restored (Fig. 5). The parts above the knees of the Buddha image on the west false door – which had been stored at Conservation d'Angkor – were safely returned to Western Prasat Top in the presence of the Cambodian Ministry of Culture and Fine Arts (Fig. 6). As for the Buddha image on the north side of the false door that had completely collapsed, it was also fully restored (Fig. 7). As a result, all three sides of the North Sanctuary, except for the east side, which is the opening, have been restored with the image of Buddha on a false door.

Fig. 4: North Sanctuary after restoration.

Fig. 5: Standing Buddha image on the west false door of North Sanctuary

Fig. 6: Standing Buddha image on the south false door of North Sanctuary.

Fig. 7: Standing Buddha image on the north false door of North Sanctuary.

On the false doors of the south and west sides of the North Sanctuary, both images of the Standing Buddha hold their right hands in front of their chests to signify a sign of *abhaya-mudrā* (non-fear), while their left hands are placed on the sides of their bodies. This Buddha image wears a robe with the right shoulder exposed. It can be seen that their feet are pointing both toes to the left with the expression of a slight twisting of the hips. The expression of the face, with eyes downcast, thick lips with slightly raised corners of the mouth, and a plump nose, one narrow band between the brow and the hair and flame-shaped *unisha* on the top of the head are characteristic of the post-Bayon style. The elements are present on the seated Buddha images in the posture of *māravijaya* on the pediments of the North Sanctuary.

On the other hand, the newly restored north false-door Buddha image, whose face, hairstyle, robes, and mudras all show the same characteristics with the other two sides, south and west. But the body and lower body shows a different aspect. The body is twisted to the right, with knees slightly bent to the right, and both toes pointed to the right, heels clearly raised. This pose indicates the similar character of the so-called "Walking Buddha". However, the Walking Buddha image is thought to have been developed during the Sukhothai period (1236-1438). In the case of Angkor, only a few examples can be seen besides those at Western Prasat Top. There is an image with twisting its body like walking gesture on the lintel on the west face of the East Gopura at Preah Palilay. Also, there is an engraved image like walking Buddha on a pillar in the third corridor of Bakan at Angkor Wat (APSARA and CKS 2013 p.158), although they are thought to date to a later period.

As the previous epigraphical studies show, some of the inscriptions had been written in Khmer which supports the close relationship between the Khmer and Sukhothai (Coedes 1969, Vickery 2004). Although it is necessary to conduct further researches on the image of the walking Buddha in mainland Southeast Asia, the newly discovered walking Buddha image from Western Prasat Top suggests the cultural and social relationship between the Angkor and surrounding countries.

3.3. Structure of the North Sanctuary - Underground Chamber

After the dismantling of the building frame was completed, we launched the dismantling of the upper platform. At this point, we identified the parts where bricks were used as an inner structure instead of laterite. It was confirmed that only laterite blocks were used for the inner structure of the platform of the south sanctuary while sandstone was used for the exterior – the same as at other major temples in Angkor.

The lower platform of the North Sanctuary was dismantled to the top of the bottommost layer (N 25) when the top of a square brick structure appeared as an underground chamber (Fig. 8). The top of the brick chamber measured 2.13m from north to south, 2.08m from east to west, and 1.48m in depth (Fig. 9). The base measured 1.85m in the north-south direction and 1.6m in the east-west direction. It was constructed as follows. As revealed in the north-south trench excavation, the underground foundation was prepared by digging down from directly below the row of laterite elements, over an area approximately 4.6m in the east-west direction, 4m in the north-south direction, and 1.5m deep. The base of the hole was paved with bricks, and four walls were erected while piling coarse sand around them. The bricks were mostly flat bricks 20cm long, 13cm wide, and 6 to 8cm high, but also included many bricks of different sizes, which were probably collected from elsewhere. In some places, the surface of the bricks was coated with clay to a thickness of around 1cm. The lower half of the structure was strongly

Fig. 8: Unearthed underground brick chamber, view from the south.

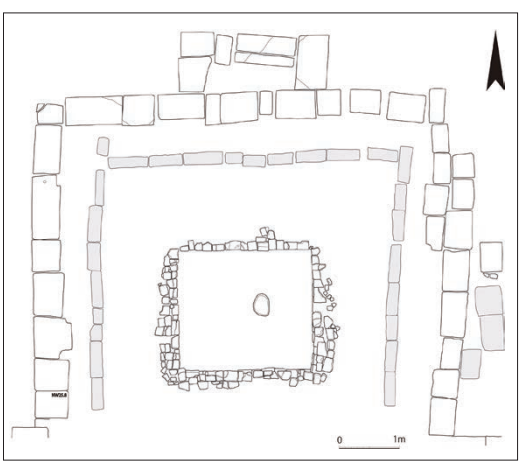


Fig. 9: Plan of the brick chamber.

burnt in many places and the surface of the east wall was conspicuously burnt and blackened. The bottom of the chamber had a 10cm or so layer of artifacts that contained a large amount of carbonized wood, from which mainly gold items and many other such artifacts were found (Fig. 10).

Fig. 10: Unearthed gold ornament and charcoal.

4. Details of the Underground Brick Chamber

The walls consisted of between 22 to 25 brick courses in total. The east wall was composed of a total of 23 brick courses (Fig. 11). Among the four faces, this face had the largest adhesion of blackened carbonized material. In fact, one-third of the north side of the east face was blackened to a height of around 35cm, and the wall toward the southern side was blackened to a height of 9cm. The north face was composed of a total of 24 brick courses. About half of the western side of the wall was covered with clay, and the bottom 9cm blackened. The west face was composed of a total of 25 brick courses. It was observed that, unlike the east and north faces, the west face was assembled by arbitrarily combining thick, short bricks with thin, long bricks. A portion of the wall was blackened to a height of about 40cm. The south face was composed of a total of 22 brick courses. No clay covering remained above a height of about 50cm from the bottom, while the structure of the bricks could be ascertained.

The floor seems to have used thin, long bricks of relatively the same size. They were first laid in a vertical orientation in two rows in the center (in the north-south direction), and other

Fig. 11. East wall of the underground brick chamber.

Fig. 12: Floor of the underground brick chamber e.g. north at top.

bricks were laid to their left and right sides. A hole measuring approximately 36cm in the north-south direction and 30cm in the east-west direction cuts through the bricks in an area slightly northeast of the center. It was excavated, but it did not contain anything in particular, and was simply filled with soil containing carbonized wood. The excavation reached a dark yellowish-brown leveling soil that was spread throughout the area at a depth of one brick from the surface, so it was assumed that the floor was made of a single layer of bricks and was also the base of the cut dug for the brick structure.

4.1. Unearthed Artifacts from the Underground Brick Chamber

174 gold objects, 29 bronze objects, 46 glass beads, 19 stone fragments, 42 crystal fragments, 11 bones and 21 unidentified items were unearthed from the bottom-most layer of the brick chamber.

Metal objects

Hollow gold beads (Fig. 13-a) These hollow beads made of gold measured around 5mm in diameter and are about 6mm long. They were made by shaping two hemispheres of sheet gold, punching out a hole and joining the two halves together. They weigh approximately 0.18g. A total of 39 such beads were unearthed.

Gold beads (Fig. 13-b): These are solid gold beads. A total of 18 such beads were unearthed. Three types were confirmed: One type shows approximately 2.0mm to 2.5mm in diameter and weigh 0.09 to 0.11g. Another type measured 1mm or so in diameter and the other measure 1.5mm or so.

Gold twisted wires (Figs. 13-c): These objects were made of three gold wires twisted in a rope-like fashion. The object in Fig. 36 is 25.55mm long, 1.5mm thick, and weighs 0.25g. It has a rough, bumpy surface, and the three wires are alternately welded together.

Gold ornaments (Figs. 13-d, e, f and g): The bottom piece in Fig. 13-d is 11.73mm long, 6.3mm wide, and weighs 0.12g. This type is thought to be an ornament made by hammering out a pattern on thin sheet gold. Fig. 13-e shows the largest among the fragments of gold products that have been found in this excavation. However, it was deformed by fire, such that it is difficult to estimate its original appearance. It is 25.79mm long, 12.37mm high at its maximum, and weighs 1.17g. Fig. 13-f shows a lump that appears to be two or three objects welded together. It is 11.36mm long, 6.82mm high at its maximum, and weighs 0.79g. Fig. 13-g shows a pendant-like object with a suspension ring. It is 8.73mm long, 5.91mm in diameter, and weighs 0.51g. Judging from its overall shape, it is presumed to be a bud-shaped bell—the likes of which are commonly seen among bronze products in Angkor—that melted in a fire.

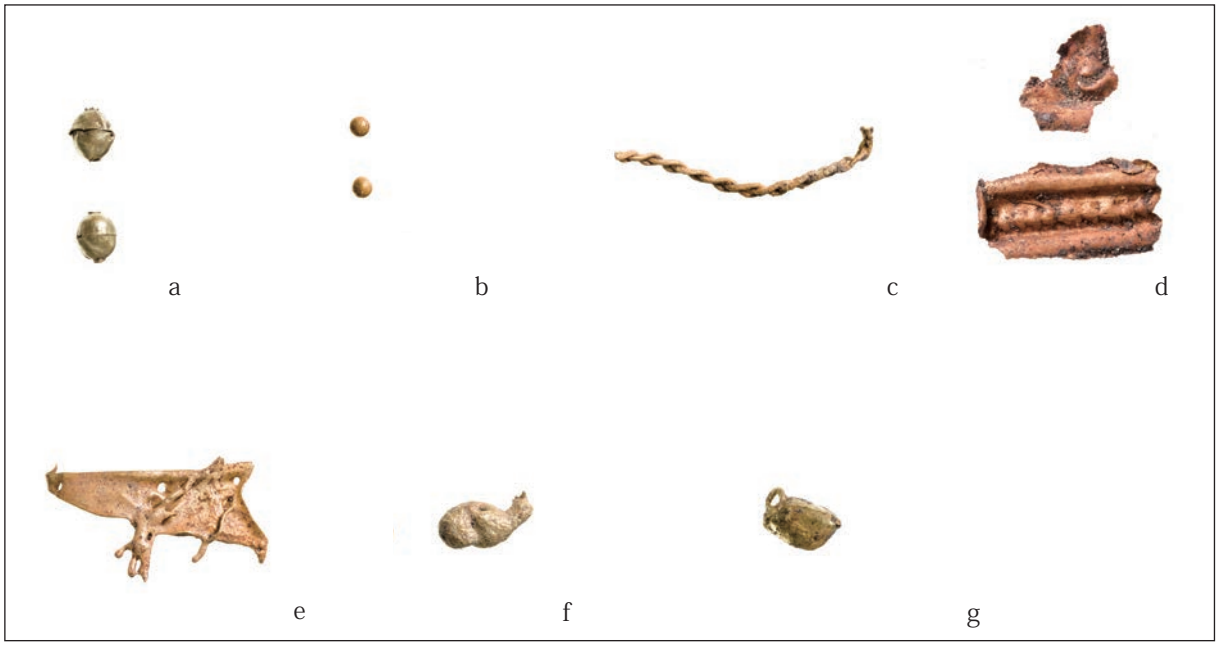


Fig. 13: Unearthed gold artifacts from the underground brick chamber.

Copper alloy beads (Fig. 14): These are small beads made of an alloy of mainly copper and tin. The bottom right bead in Fig. 14 is 3.11mm in diameter and weighs 0.10g, and the upper left bead is 3.76mm in diameter and weighs 0.13g.

Glass and ore objects

Glass beads (Fig. 15-a): A total of 45 small glass beads were unearthed. The bead on the right in Fig. 15 is 3.71mm in diameter and weighs 0.04g, and the one on the left is 2.38mm in diameter and weighs 0.02g. They are perforated with holes.

Blue glass fragments (Fig. 15-b): A total of 17 fragments of transparent blue glass were unearthed. The upper right fragment in Fig. 16 is 4.1mm long, 2.1mm wide and weighs 0.03g. The upper left fragment is 3.37mm long, 4.03mm wide and weighs 0.04g. A group of 11 fragments were found from the same spot, perhaps indicating that the object from which these

Fig. 14: Unearthed bronze from the underground brick chamber.

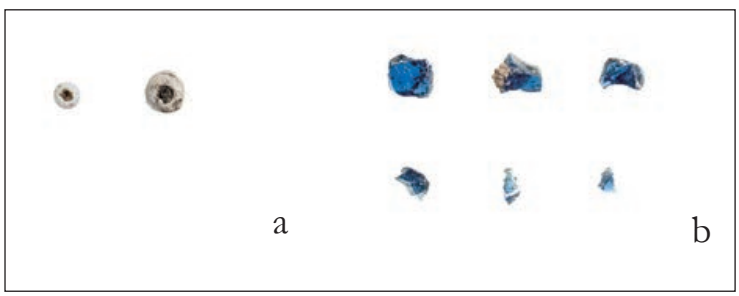


Fig. 15: Unearthed glass from the underground brick chamber.

fragments had broken off had been placed in this location. The detailed scientific data is shown in chapter 5.

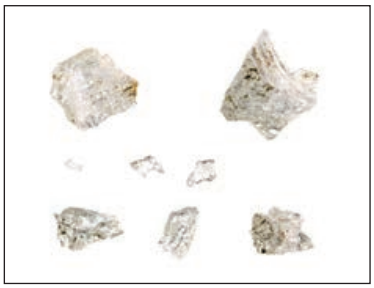


Fig. 16: Unearthed crystals from the underground brick chamber.

Fig. 17: Unearthed burnt bone from the underground brick chamber

Crystal fragments (Fig. 16): A total of 42 pieces of crystal fragments were unearthed. They are randomly broken fragments and do not retain their original appearance, but they appear to display the same degree of transparency, so they may have come from the same object that fractured in the fire.

Table. 1 Results of X-ray fluorescence analysis

No.	style	color/ transparency	wt%																			
			Na_2O	MgO	Al_2O_3	SiO_2	P_2O_3	SO_3	K_2O	CaO	TiO_2	Cr_2O_3	MnO	Fe_2O_3	CoO	Ni_2O_3	CuO	ZnO	As_2O_3	PbO	Rb_2O	SrO	ZrO_2
17	fragment	cobalt blue/ transparent	18.8	0.8	5.0	68.2	0.1	0.3	1.8	1.0	0.25	0.02	0.05	3.30	0.11		0.02		0.10		0.03	0.03	0.17
BW07-1	bead	white/ translucent	1.1	0.1	1.0	45.5	1.0		10.0	4.1	0.01	0.02	0.04	0.18	0.02	0.01	0.03	0.02		36.3	0.04	0.18	0.42
BW07-2	bead	white/ translucent	0.9	0.1	1.0	46.0	0.7		7.0	4.1	0.02	0.02	0.04	0.19	0.02	0.01	0.04	0.02		36.3	0.03	0.17	0.40

Table.2 Lead isotope ratios of potash lead glass

Sample name	$^{206}Pb/^{204}Pb$	$^{207}Pb/^{204}Pb$	$^{208}Pb/^{204}Pb$	$^{207}Pb/^{206}Pb$	$^{208}Pb/^{206}Pb$
NBS-SRM-981 (standard lead)	16.890	15.429	36.504	0.9135	2.1613
Western Prasat Top BW07-1	**18.521**	**15.638**	**38.578**	**0.8444**	**2.0829**
Western Prasat Top BW07-2	**18.524**	**15.641**	**38.585**	**0.8444**	**2.0830**
Krang Kor bead No.12	**18.518**	**15.747**	**39.059**	**0.8504**	**2.1093**
Krang Kor bead	**18.633**	**15.759**	**39.322**	**0.8458**	**2.1104**
NBS-SRM-981 (standard lead)	16.893	15.432	36.512	0.9135	2.1614
	±0.010	±0.010	±0.030	±0.0003	±0.0006

Burnt bone (Fig. 17): The archaeological survey of Western Prasat Top yielded 11 burnt bone fragments from the brick chamber that was found in the bottom layer of the North Sanctuary. Among the burnt bone fragments that have been found, three compact bone fragments (Bones 1, 2, 5) were selected as samples to be subject to histomorphological examination. According to the result of a histomorphological species identification of compact bone in addition to visual observation by Sawada (Sawada 2018):

(1) The histology of Bones 1 and 2 was unclear, but Bone 5 (Fig. 17) displayed a good histological structure with a predominance of secondary osteons.

(2) From an observation of the histomorphology of Bone 5, the bone was judged to be of a medium to large-sized mammal (Fig. 18, 19). The closest species was thought to be human, but there is not enough data on the bone histomorphological findings for most animals living in continental Southeast Asia.

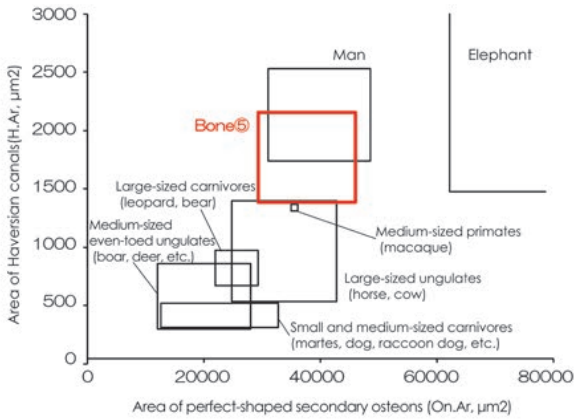


Fig. 18: The areas of perfect-shaped secondary osteons (On.Ar) and Haversian canals (H.Ar) of Bone 5 and comparison animal groups (Sawada 2018)

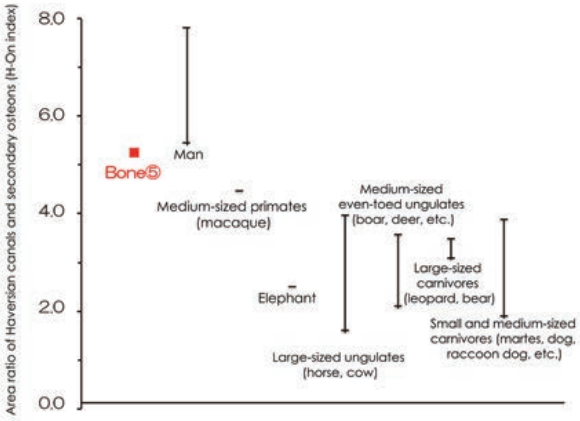


Fig. 19: Ratios of the area of Haversian canals to the area of osteons in Bone 5 and comparison animal groups (H-On index) (Sawada 2018)

4.2. Analysis on the unearthed carbonized wood

Six carbonized samples were unearthed from the bottommost layer of the brick structure inside the platform of the North Sanctuary of Western Prasat Top and were subjected to analysis. The carbon samples were measured for their abundance ratios of radiocarbon using an accelerated mass spectrometer (AMS) owned by The University Museum of The University of Tokyo (Yoneda et.al. 2018). According to the team's result, "the dates of the six samples were similar to each other, so there was no need to consider the old wood effect that derives from old growth rings. The dates of the six samples could be treated as a weighted average of 573 ± 12 BP, since a calculation of the statistic from the dates of the six samples according to x-squared distribution equaled 1.8 and was smaller than the reference value of 11.1 at a significance level of 5% (Wilson and Ward 1981). From this weighted average, the estimated values obtained using IntCal13 were 1326 – 1342 cal. (41.5%) and 1394 – 1406 cal. (26.7%) (Fig.20). On the other hand, when the weighted average was calibrated by adding an offset value (-21 ± 6 years) to ShCal13, an estimated value of 1397 – 1412 cal. (68.2%) was obtained (Fig. 21). In the future, it is necessary to examine the radiocarbon concentration in the growth rings of trees

and develop a valid calibration curve specific to the region, but at the present stage, the latter evaluation was judged to be valid."

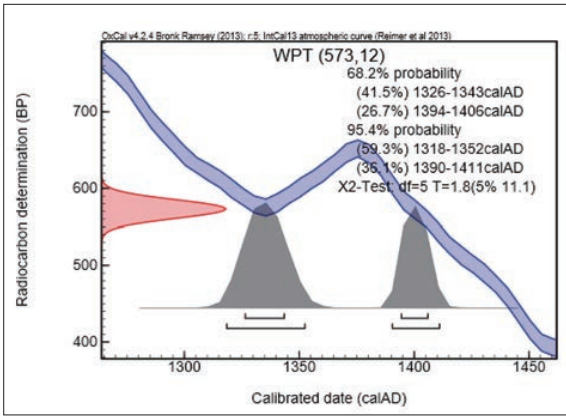


Fig. 20: Probability density distribution of the weighted average of the six samples (573 ± 12 BP) calibrated by IntCal13 (Yoneda et. al. 2018)

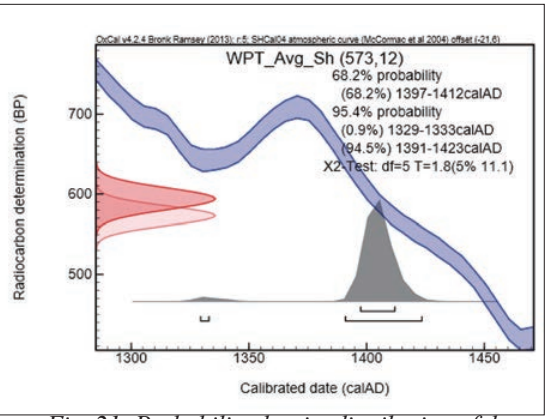


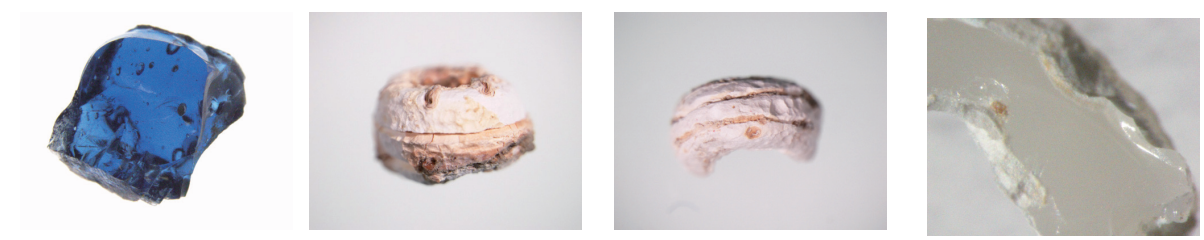
Fig. 21: Probability density distribution of the weighted average of the six samples (573 ± 12 BP) calibrated by ShCal13 (with the addition of an off set value of -21 ± 6 years) (Yoneda et. al. 2018)

5. Analysis of unearthed glass beads

5.1. Materials and Methods

We examined glass fragments and glass beads from Western Prasat Top. The glass fragments were all blue and transparent (Fig. 22-a). The small glass beads were heavily weathered (Fig. 22-b, c), but were originally translucent white in color (Fig. 22-d). They are made with a winding method.

We conducted chemical analysis on one of the fragments and two small beads to identify the compositional type and colorant of glass. Chemical composition was analyzed by energy dispersive X-ray fluorescence spectrometer (EDAX, EAGLEⅢ). The measurement was performed after removing the weathered layer on the glass surface using an ultrasonic grinder. The target material of the tube is rhodium (Rd) and the tube voltage is set to 20 kV, the X-ray tube current is set to 200 μA, and a measuring time (live time) is 300 seconds. The



a: No. 17 (in Table 1) b: BW07-1 (in Table 1) c: BW07-2 (in Table 1) d: Cross section surface of BW07-2

Fig. 22 Glass from Western Prasat Top

measurements were conducted in a vacuum. The measurement results are normalized by the fundamental parameter (FP) method in a way that the total amount of the oxides of elements detected will be 100%. The FP method was calibrated using glass standard samples (Corning-A, SG5, SG7, SGT5, NIST620).

Concerning the glass beads, lead isotope analysis was also conducted. Lead isotope ratios were measured with a Finningan-MAR262 mass spectrometer by NIPPON STEEL TECHNOLOGY Co., Ltd. Results were standardized using lead isotopic standard NBS-SRM-981.

5.2. Results and discussions

The results of X-ray fluorescence analysis are shown in Table1. The results of analysis indicate that the blue glass is a soda glass. In addition, this blue glass has a relatively high amount of Al_2O_3 and low amount of CaO and is presumed to carry on the tradition of Southeast Asian type of glass that existed since B.C. ,such as Group SIIB (Oga and Tamura 2013), or m-Na-Al (Lankton and Dussubieux 2013).

However, it is noteworthy that arsenic (As) is detected in addition to cobalt (Co) in this blue glass, and the coloring agent (cobalt raw material) is different from more ancient ones. Since sulfur (S) was also detected, it is presumed that cobaltite (COAsS) is probably used as the cobalt raw material. Cobalt raw materials containing arsenic were not used in ancient glass before 8th century. For ancient glass in Southeast Asia, a cobalt raw material with a large amount of manganese (MnO) or a cobalt raw material with a slight amount of copper (CuO) and lead (PbO) was used. The former is thought to be a mineral like asbolite, but the specific minerals for the latter are not known. On the other hand, in the medieval western world, cobaltite (CoAsS) was used as a coloring agent. In this connection, the dark blue Bohemian glass beaker found in Japan with a signature of 1599 is colored with cobalt containing arsenic (Tamura 2017). In Southeast Asia, it is possible that cobaltite came to be used as a coloring agent sometime after the 8th century. It is possible that the blue glass from Western Prasat Top was made of Southeast Asian glass with a cobalt colorant obtained from the West.

On the other hand, the two glass beads were both potash-lead glass. Potash-lead glass is a relatively new glass that was invented in China and appeared in the Song Dynasty at the latest. Potash-lead glass is known in Southeast Asia as a material for *Chinese Coil Beads*, and its distribution volume increased in the late Song Dynasty, surpassing *Indo-Pacific Beads* in numbers after the 13th century (Francis 1989, 1990). The results of lead isotope analysis of these two potash-lead glass beads are shown in Table2. For comparison, the lead isotope ratios of two potash-lead glass beads excavated from the Krang Kor site in Cambodia (Sato et al. 2013) were also measured, and the results are also shown in Table 2. The two potash-lead glass

beads excavated from Western Prasat Top showed very similar lead isotope ratios to each other but were significantly different from the lead isotope ratios from the potash glass beads of the Krang Kor site. The results were compared with the lead isotope ratios of bronze objects or lead ores from China and Southeast Asia that are known to have been worked from previous studies. Glass beads from Western Prasat Top have relatively small values of $^{207}Pb/^{206}Pb$ and $^{208}Pb/^{206}Pb$, which differ from those of lead ores, ingots and bronze products from Southeast Asia. As for the glass beads of Krang Kor, one is plotted in the area where bronze products are concentrated in Fig.2, but the other is isolated.

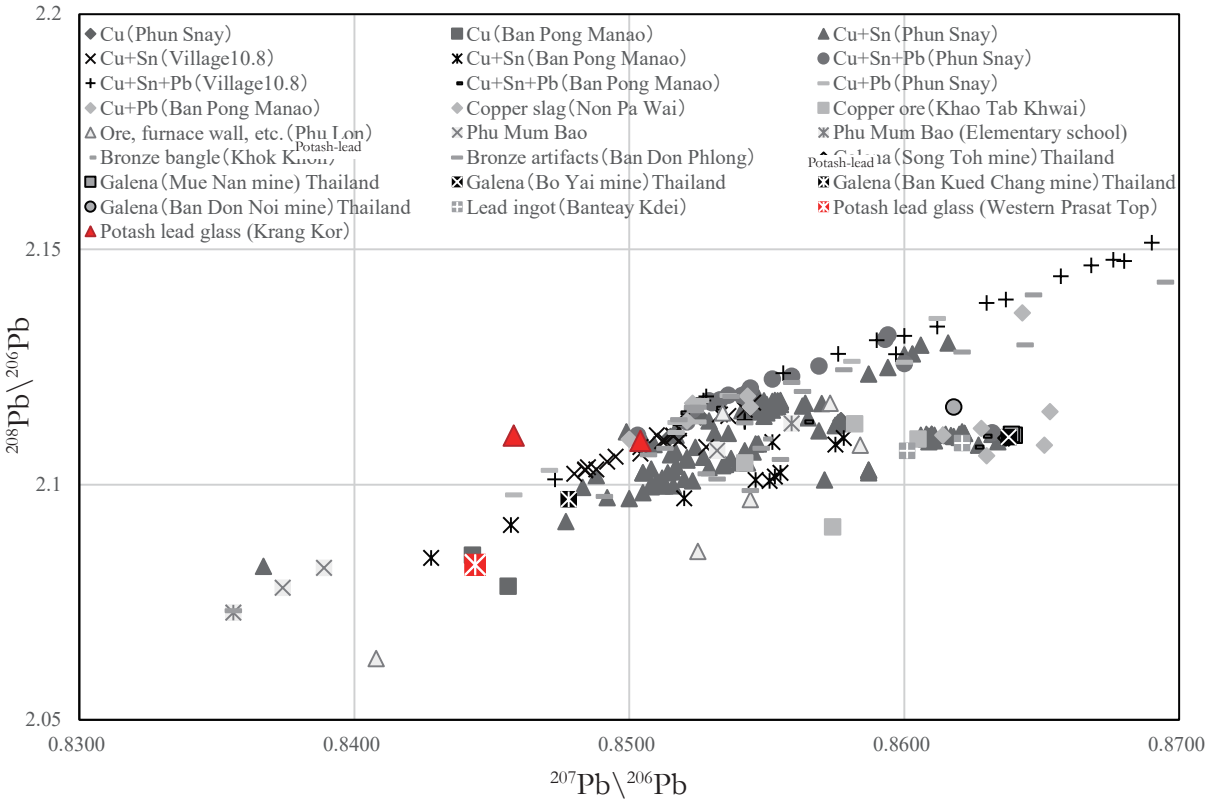


Fig. 23: Comparison with lead isotope ratios of lead ores, ingots and bronze products from Southeast Asia.

Compared with the Chinese mining data (referred in Oga 2019), there are mines with similar lead isotope ratios in the lower Yangtze River basin (Anhui 安徽 and Jiangxi 江西provinces) (Fig. 24-2: Region E) to those of the glass beads from Western Prasat Top. In addition, there are mines with similar values in the upper Yangtze River basin (Fig. 24-2: Region I). Furthermore, although not completely in correspondence, it is possible that there are mines with similar lead isotope ratios in the middle Yangtze River basin (Fig. 24-2: Region G) and the Lingnan (嶺南) region (Fig. 24-2: Region H). In addition, the lead isotope ratios of Krang Kor glass beads correspond to those of the mine in Guizhou province (貴州省) in the

middle Yangtze River basin (Fig.24-2: Region I). It should be noted that the Chinese mines used for comparison are currently under development and are not accompanied by archaeological evidence of ancient development. Therefore, although it requires careful discussion, this result presents the potential for the origin of these glass beads. In particular, the existence of mines with similar lead isotope ratios in the lower reaches of the Yangtze River is notable because it is consistent with the description in 'The Customs of Cambodia' that the beads imported from Quanzhou (泉州) or Chuzhou (処州) were desired in Chenla (真臘) (Zhou 1989, 2007) .

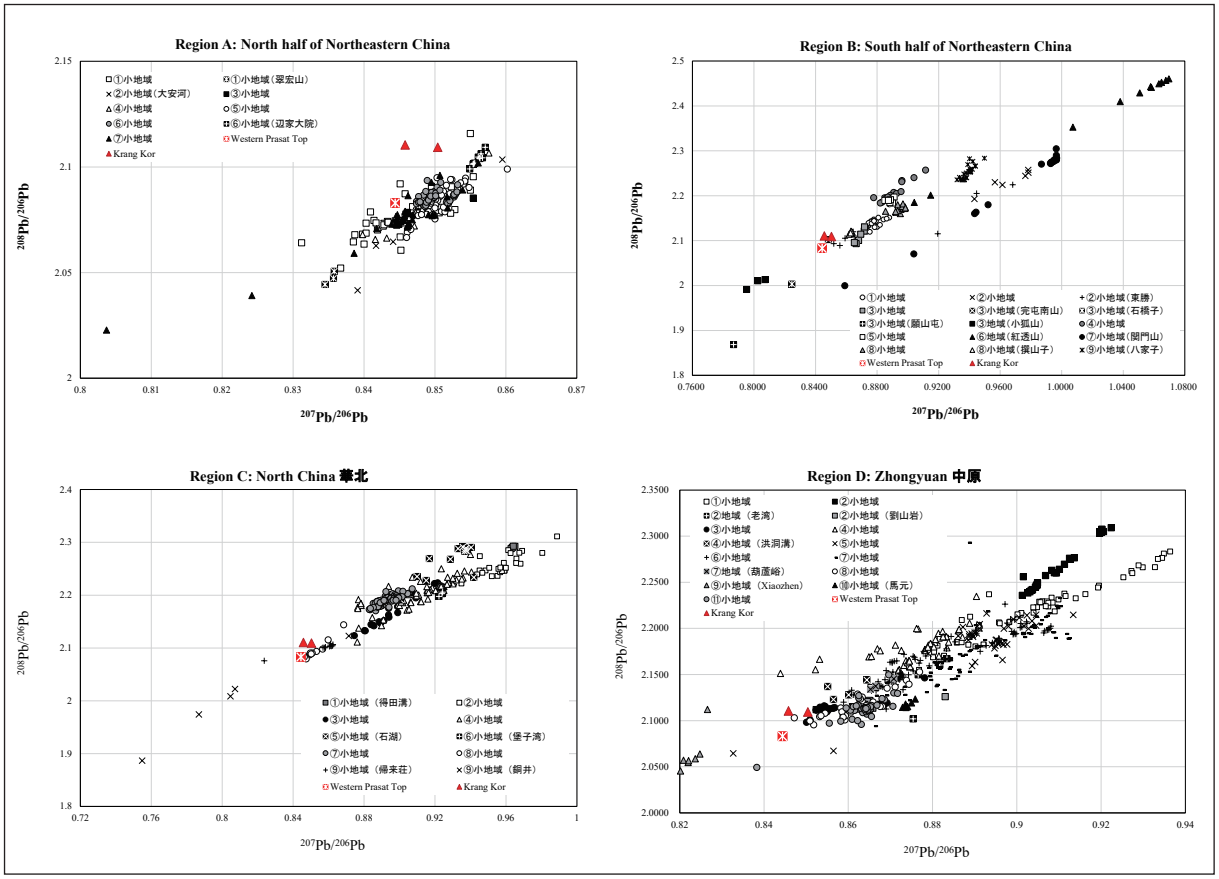


Fig. 24-1: Comparison with lead isotope ratios of ores in China. The graphs of Regions A to I correspond to the regions in Fig. 25. Plots of same shape on each graph indicate the small areas within the region.

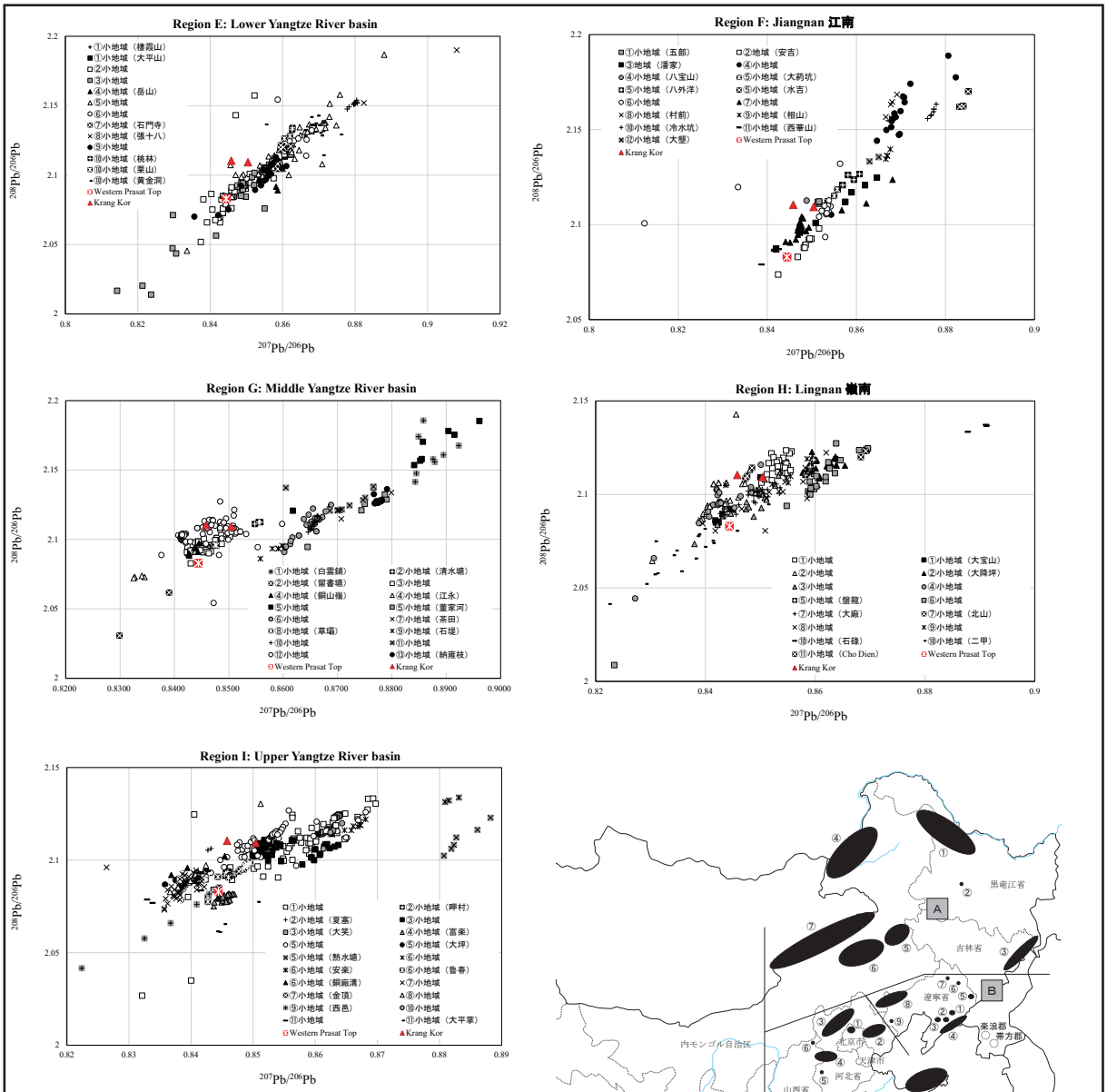


Fig. 24-2: Comparison with lead isotope ratios of ores in China. The graphs of Regions A to I correspond to the regions in Fig. 25. Plots of sameshape on each graph indicate the small areas within the region.

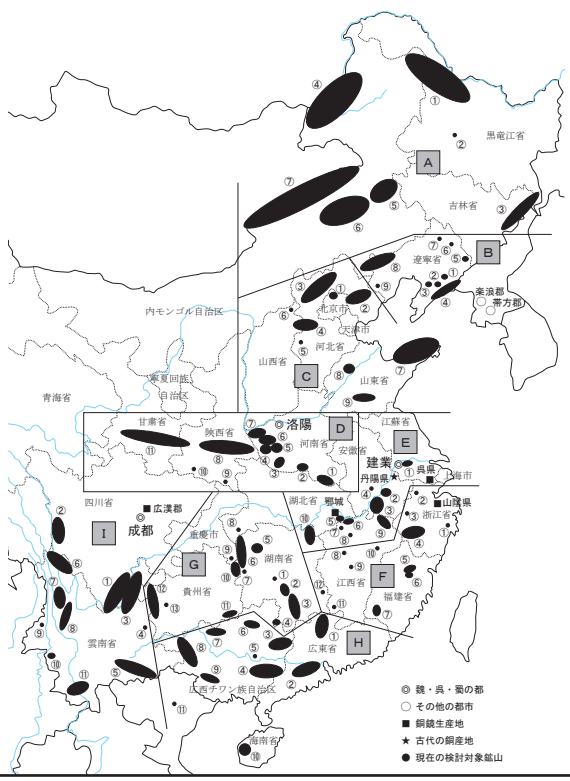


Fig. 25: Regional classification of Chinese ore (Oga 2019)

6. Comparison with other sites

What was the purpose of the brickwork chamber under the North Sanctuary? We will examine whether similar remains have been found in and outside of Angkor. At Angkor, several excavations have revealed structures concealed beneath the sanctuaries of several major temples. These have been carried out mainly by French researchers.

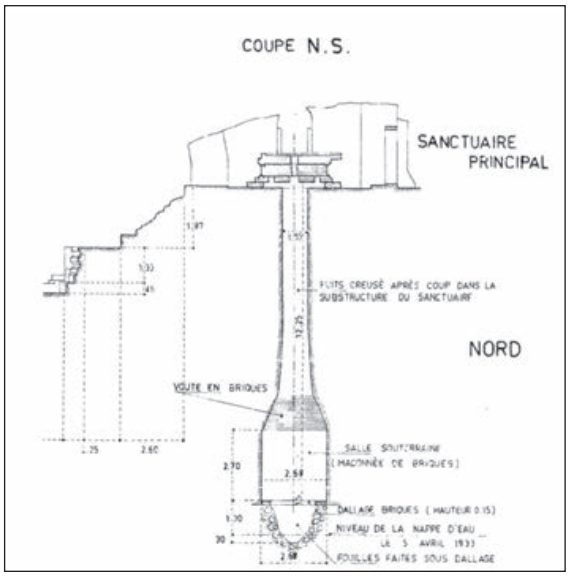


Fig. 26: Profile of the central sanctuary of Ak Yum (EFEO 895A, CA/P/350)

Ak Yum

Ak Yum is thought to have been erected in the 8th or early 9th century. An Excavation of the central pyramidal platform of Ak Yum temple was carried out by Trouvé in 1933 (Chronique 1935) (Fig. 26). The excavation revealed an underground chamber with brick walls and a floor in the basement. The chamber was found to have a ceiling and an overhanging vaulted structure with brick coursing.

The existence of a vertical shaft leading to this underground chamber has not been confirmed, but this chamber is located underneath the Linga which was on the upper surface of the platform. However, Trouvé concluded that this chamber had been looted before. It shares a commonality with Western Prasat Top in the sense that it is an underground space made of brick, but its function is completely different.

Bakong

An Excavation of the Bakong temple was carried out in 1936 by EFEO (Rapport 1936) (Fig.27). The central tower of the temple is a pyramid-shaped platform about 15m high above ground. Excavation of the top of the pyramid down to 20m below the surface uncovered the

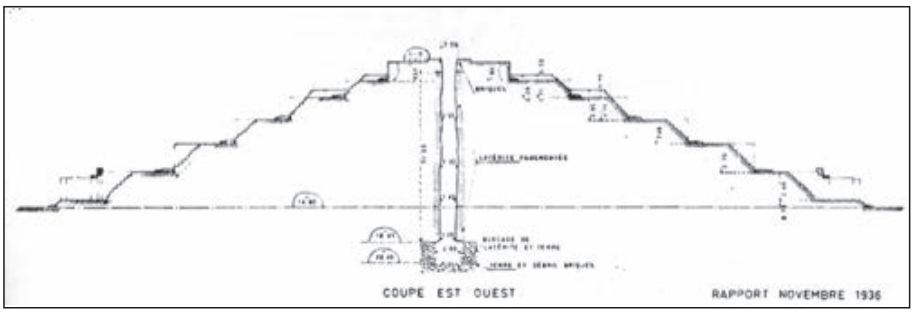


Fig. 27: Profile of the central sanctuary of Bakong (EFEO 2027A, Raport 1936)

original vertical shaft with laterite walls. This shaft had already been excavated in the past. The entrance to the vertical shaft was recorded to be approximately 2m square, with a 1.5m square chamber below it and brick elements confirmed at the bottom of the chamber. This brick material allowed those in charge to determine that the top of the pyramid was initially a brick sanctuary, which was later modified to a sandstone temple.

Angkor Wat

It is well known that the central tower of Angkor Wat, the third corridor of the Bakan had four sides with standing Buddha images in the doorways. The figures on all four sides (east, west, north, south) have the right hand in front of the chest, representing *abhaya-mudrā*, and the left hand on the side of the body, which is the same structure as that on the south and west side of the false doors of the North Sanctuary at Western Prasat Top. According to Moura, they entered the interior through the upper part of the northern false door of the central tower and found a number of statues of Buddha and gods, including triad statues of a seated Buddha on the Nāga as the main deity (Moura 1883). In 1908, Commaille, who began clearance work in the Bakan, stated that he found many small jars and bowls containing cremated bones. The specific locations are not known, but cremated bones were found in cylindrical cavity deposits (Rapport 1908).

Prior to the excavation by Trouvé of the basement of the Central tower of Angkor Wat, Marchal had the task of removing stones and other materials from the floor of the central tower of the third Corridor, the Bakan, in 1934 (Marchal 1935) (Fig. 28). A seated Buddha statue on a Nāga measuring 2.10m in height was found on the internal side of the Central tower. Marchal found a well which had been dug at the center of a disturbance and confirmed the foundation structure of the central tower. This well was 1.4 m in diameter at the top and 0.80 m in diameter at the base.

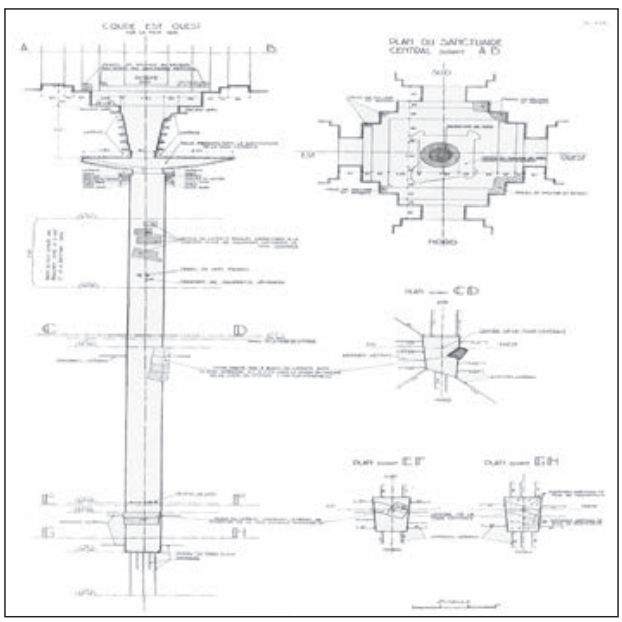


Fig. 28: Profile of the central sanctuary of Angkor Wat (Chronique 1935)

They dug the center of the central tower and reached a depth of 23m where sandstone gravels and laterite fragments began to emerge and were almost as high as the ground level of Angkor Wat. A square laterite block was detected at 23.00 m. There was another laterite block underneath it, with

a circular cavity from which 2 white crystals and two gold leaves were detected. The gold leaf is in the shape of two circular gold leaves, 0.18m in diameter and weighing 65g. It is believed to have been produced by the hammering technique. The gold leaf was found at the bottom of a cylindrical cavity 0.23m in diameter and 0.12m deep. Further excavation continued to a total depth of 27.75m below the cavity, but according to the report nothing else was found. This means that no underground chamber-like space was ever discovered.

Bayon

In 1933, Trouvé carried out an excavation in the main room of the central tower of the Bayon (Trouvé 1933). A vertical shaft – which showed evidence for earlier looting –was found in the floor of the central tower and excavated to a depth of 14m. It was discovered that statue of a Buddha on the Nāga image with characteristics of the early Ayutthaya style, were on display (Polkinghorne, Pottier, Fischer 2013).

In 1937, Marchal excavated the basic structure of the building in the 12th tower in the east room of the central tower (Chronique 1937) (Fig. 29). In this investigation, the excavation was carried out to a depth of 6.3m below the floor surface. A 1.34m high laterite masonry construction was found in the interior of the foundation. A layer of sandstone and gravel was found to continue below it, and sandstone blocks were found at a depth of about 4 m below the floor of the tower. These investigations could not resolve whether there was an underground chamber in the central tower of the Bayon or not.

In addition, the Prang of Prasat Thom, Koh Ker is a pyramid-shaped temple. It is the largest pyramidal temple of the Angkor period. A deep shaft in the center was opened vertically from the top of the Prang. It is said that a large Linga was originally placed on top of the Prang, and that the shaft is thought to be associated with looting in the past (Bruguier 2013).

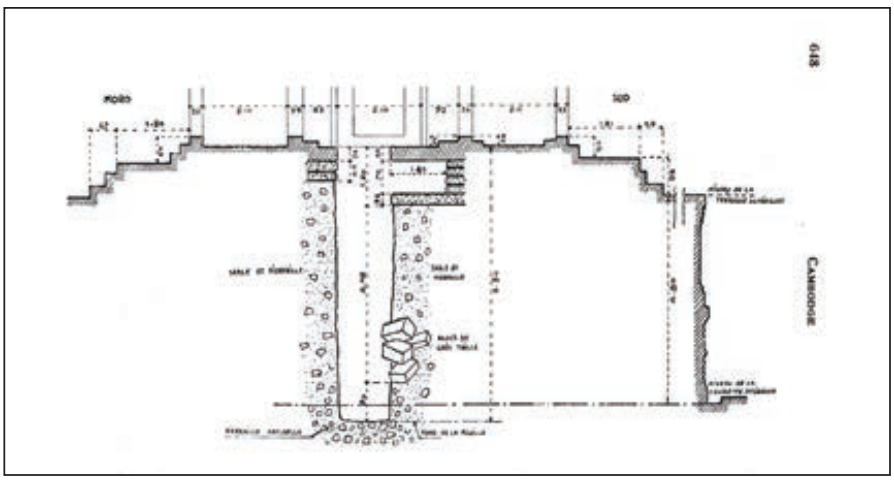


Fig. 29: Profile of the in the 12th tower of Bayon (Chronique 1937)

The Han Chey temple is a pre-Angkorian Hindu temple. In 2007, Conservation d'Angkor carried out conservation and restoration works (Kim 2007). The brick remains were identified at the center of the sanctuary. However, the brick remains run from above the ground level to the basement of the sanctuary, and the bricks were not exposed to the fire in the chamber. It appears to have a different character to that of Western Prasat Top.

Wat Mahathat

As mentioned above, the number of cases for underground remains found in temples of the Angkor period is limited. There are no underground chambers showing evidence of fire, like the remains found in the basement of the North Sanctuary of Western Prasat Top. Here, we examine whether similar remains have been found outside the Angkor territory.

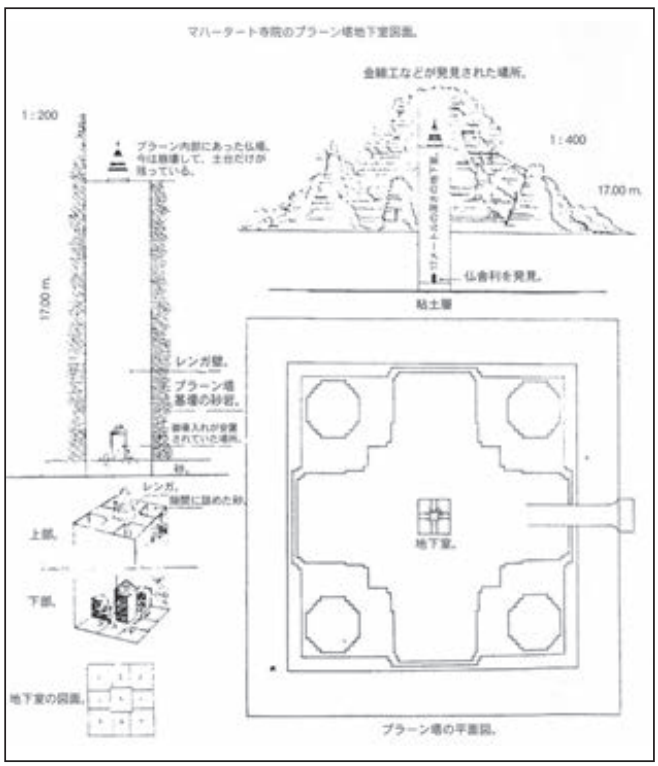


Fig. 30: Profile of the central tower, Wat Mahathat (Kasetsiri and Yoshikawa 2007)

First of all, Wat Mahathat in Ayutthaya is thought to have been built in the 14th century (Kasetsiri, Yoshikawa 2007). In 1956, the Fine Arts Department of Thailand carried out an excavation of the basement of the *chedi* inside the *prang* (Fig. 30). Following the site of the excavation, they found a vertical shaft covered with a brick wall inside, and they found the stupa-shaped container containing the Śarīra at a depth of 17m. The Śarīra was housed in a nested, seven-tiered stupa-shaped container. This stupa-shaped container was housed in a 3.2 m long stone pillar, which is located in the center of the Prang.

Wat Ratchaburana

Like Wat Mahathat, Wat Ratchaburana was built closest to the Ayutthaya Royal Palace. According to the Royal Chronicle, Luang Prasoet edition (compiled in 1680), Borommaracha II (or Chao Sam Phraya, meaning third ruler) built this temple on the cremation ground of his two brothers. A 16th-century chronicle of the dynasties of northern Thailand, Jinakalamalipakaranam, mentions 25 monks from Chiang Mai, and 8 monks from Cambodia returning to Ayutthaya from

Sri Lanka where they were re-ordained in 1424 (Chirapravati 2012).

In 1957, the Fine Arts Department of Thailand conducted the excavation after looters broke into the underground rooms (Fig. 31). The main tower of this temple was made of brick and was built on a square laterite platform, with four subordinate stupas at each corner. There are three rooms in the main tower, from the upper floor: Mural room, Treasure room and, the lowest, is the Relic room.

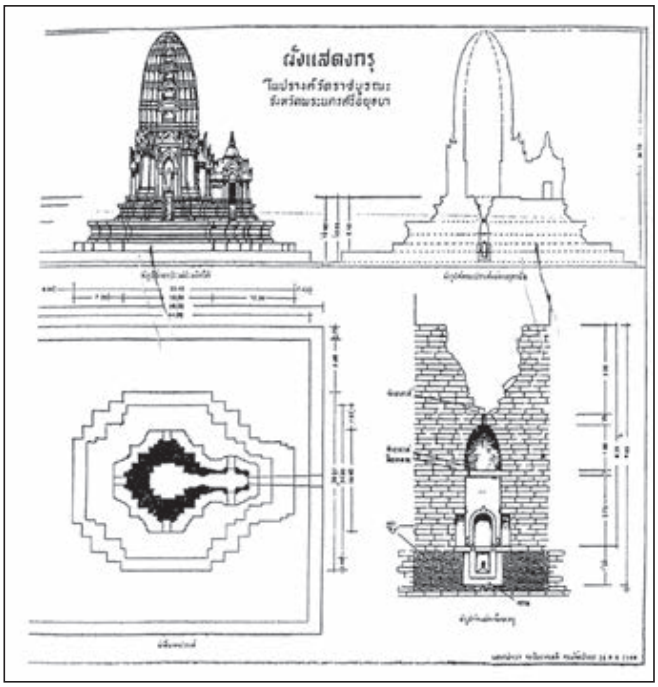


Fig. 31: Profile and plan of Wat Ratchaburana (Kasetsiri and Yoshikawa 2007)

The Treasure room and Relic room were built in the basement. Buddhist relics, royal vessels and jewelry were excavated from the Treasure room. Mural paintings of 60 Jātaka scenes and 80 disciples are shown on the wall of the Treasure room. Four pearl vessels were also found to contain pearls. The pearls were stored in the Great Stupa in Anuradhapura of Sri Lanka (Chirapravati 2012).

The lowest level, the Relic room is built directly below the Treasure room. The room is very small, measuring only 1.2 meters square. They found miniature stupas, gold and crystal Buddha statues, crystal bell-shaped stupas with Brahmanic inscriptions on a Gold tablet and other items. This Brahmanic inscription indicates the name of *Sri Chandrabhanujayavarddha Horadhipati* on the surface. Possibly it is the person or persons who presided over the Wat Ratchaburana's foundation rituals (Chirapravati 2012). On the reverse side there is a Khmer style title *Kamaraten Dhammabdhinanda*. This temple has an underground space in the basement of the sanctuary, where gold products are stored, but it is not the same as Western Prasat Top. The main difference is that it is not fire or heat effected.

As already mentioned above, there are only a limited number of cases in which the remains were found underground of their sanctuary. The key points to consider in comparing the subsurface remains of a sanctuary are the presence or absence of a vertical shaft, an underground chamber and a fire/heat-bearing trace. Western Prasat Top did not have a vertical shaft but had an underground chamber, with traces showing fire. In comparison with other temples, although some shared the presence or absence of a vertical shaft and an underground chamber, all other temples lacked evidence of heat exposure to fire. This was found to be a clear difference.

7. A Study on the underground brick chamber

7.1. Character of underground brick chamber

It is necessary to discuss the reason why the underground brick chamber of the North Sanctuary at Western Prasat Top was subjected to heat. The fact that it was exposed to heat is due to the large amount of charcoal excavated from 10cm above the floor, the sooty traces on the four walls and floor of the underground chamber, the traces of heat on many of the metal objects and bone fragments. This is the reason why some event related with fire is thought to have been conducted in the underground chamber.

It is necessary to consider several hypotheses regarding this fire event.

The first possibility is that it was an accidental fire. However, this is unlikely as the remains of the fire were contained within the single room basement.

The second possibility relates to rituals involving fire, such *as homa (goma)*. *Homa* rituals are common in tantric Buddhism, usually involving a square or circular altar on which incense wood, oil, rice and other plants is placed while chanting a *sutra* (Mori 1993) and it was widely spread from India, Tibet, Southeast Asia and East Asia. *Homa* ritual is continued to practice in Tibet and Japan. *Homa* in Jainism is usually performed by setting up an altar with incense and the pouring of incense oil. However, it is unlikely that precious metals or human bones would be burned in either case.

The third possibility is cremation. At Angkor, while cremated bones have been found at several sites, the location where the cremation ceremony occurred has not been found yet. In this case, it is noteworthy that the burned bones found in the excavated remains, unearthed from the bottom of the underground chamber and probably human, were heated and altered by the fire.

In addition, the walls and floor surfaces were exposed to heat with soot remaining on the walls and floors – although the floor surfaces were most exposed to heat, with soot up to about 20-40cm high, the top part of the chamber seemed to be unaffected by fire. That is to say, they were not exposed to heat for as long or as many times. The reasons why the number of excavated burnt bone fragments is small, and the number of other metal or glass artifacts is not so large, might be derived from the possibility of secondary burial. Most of the materials was likely reinterred in a different location and the burnt bones and major ancillary items picked up and placed in a cinerary container or other vessel. Although this is just one of the possibilities, it is necessary to examine and compare other archaeological evidence regarding fire ritual events, such us cremation, in Cambodia.

7.2. Funeral Rites

If the brick chamber was a space for cremation, it is necessary to consider what kind of

funeral rituals were carried out in Angkor at that time.

We examine here the burial sites discovered so far. The excavations carried out by B.P. Groslier in 1964 led to the discovery of a group of ossuary vessels on the west bank of Sras Srang (Corbin 1998). Cremated bones were placed inside Khmer pottery or imported ceramics, while bronze products and lead ingots, believed to be burial accessories, were found around them. The authors did not see these burial accessories in person, so it is a matter of speculation. Judging from the report, the burial accessories do not appear to have been exposed to fire, so it is assumed the accessories were buried after the cremation ceremony had been conducted. In other words, there are no relics that have been exposed to fire like those at Western Prasat Top, as far as we can see.

It is believed that cremation was conducted at Pre Rup judging from the name of this temple which means "to turn the body" (Glaize 1993). Glaize states that "it recalls one of the cremation rites, where the silhouette of the corpse in its bed of cinders is successively turned towards different orientations. A large tank at the base of the east stair to the pyramid is considered by some to have been used in such ceremonies." However, it is uncertain whether cremations were actually performed at this site.

At the Kok Patri site (APSARA, FOKCI 2005) and Banteay Kdei (Nakao 2000), also in the Angkor region, a group of ossuary vessels with fragments of cremated bone were discovered. All of them date from the 16th and 17th centuries onwards and are later in date than Western Prasat Top. Many other examples of ossuary vessels dating from at least the 16th century onward have been reported in various parts of Cambodia, suggesting the possibility that these rituals were very common after Theravāda Buddhism had spread throughout the country – and continue today. Although ossuary vessels have been found at Sras Srang, Kok Patri, and Pre Rup, the actual place of cremation has not yet been found.

The wooden coffin graves and ossuary vessels found in the Cardamon Mountain are an important source for understanding the grave system of the hill tribes (Beavan 2012). Wooden coffin tombs and storage vessels were placed in cliffs and other locations, and a C14 date, mainly from the late 14th to late 16th century, has been reported. Although close in age, the major difference is that they were not cremated and are thought to have been buried in a wooden coffin tomb or in a cinerary vessel after wind burial.

From the Krang Kor site in Kompong Chhnang province, excavated jointly by the Nara National Research Institute for Cultural Properties and the Ministry of Culture and Fine Arts, two burials were discovered (Sato et.al. 2013). Although no human bones were found, the arrangement of round-bottomed earthenware, ceramics, swords, glass beads, bracelets, etc., suggested that it was a burial pit which had been used for burial in an extended position. Based on the date of the pottery, it is estimated to be late 15th or early 16th century, slightly later than

Western Prasat Top. However, none of the materials showed any evidence of heat exposure.

Now we consider an example at Western Prasat Top again. Four stoneware and earthenware vessels were found from the south side of the South Sanctuary (Fig. 32). The Khmer stoneware vase (A) was excavated in the upright position from the southwest corner of the South Sanctuary platform with the top of the neck notched (Fig. 33, 34). Three earthenware pieces were recovered: one nearly complete round-bottomed pot (B1), one pot fragment from the mouth rim to the neck (B2) and one nearly half-preserved kendi (C) (Fig. 35). Unfortunately, no cremated bones were found in any of the jars, so it is not clear whether they were cremation vessels or not. Cremated bones were also found just beside the Buddhist pedestal on the Buddhist terrace in a fragment of an earthenware jarlet (Fig. 36). It is still unclear whether this pot is related to the brick remains of the North Sanctuary, as there is no evidence to support a link.

In the section on deaths in paragraph 17 of the "Customs of Cambodia" by Zhou Dagan who visited Angkor in 1296-1297, it says

"When people die there are no coffins. The body is just kept on a kind of bamboo mat covered by a cloth…(the) body is carried out of the town to a remote, uninhabited spot where it is thrown down and left. After that, vultures, crows and dogs come and eat it...(n)owadays there are also more and more cremations, mainly of the offspring of Chinese,….The kings are still buried in towers, though I do not know if their corpses are buried, or just their bones" (Zhou 1989, 2007).

Also, one of the earliest European visitors, Tomé Pires, who visited Southeast Asia mentioned that "In this country, the lords burn themselves on the death of the king-as do the king's wives and the other women on the death of their husbands. And they go around with their ears shorn as a sign of elegance" (Pires 1944). Christoval de Jaque mentioned that Cambodians burned their dead on pyres of fragrant wood such as aloe, eaglewood and sandalwood (in Groslier 2006).

According to Zhou's records, the custom of cremation was already practiced in some parts of Angkor at the end of the 13th century. The custom of cremation is also recorded by European's in the 16th century. On the other hand, the fact that no cremation-related remains have been detected in Cambodia, and even if the underground brick chamber discovered in Western Prasat Top are cremation remains, no directly related cinerary vessels have been found, leaving many unknowns, and it is necessary to continue the investigation with various possibilities in mind.

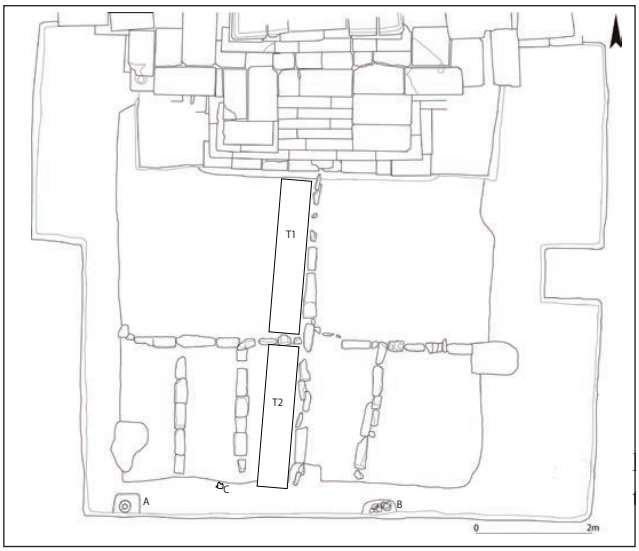


Fig. 32: Plan of the foundation of the south of the south sanctuary

Fig. 33: Unearthed Khmer stoneware from the south of the south sanctuary

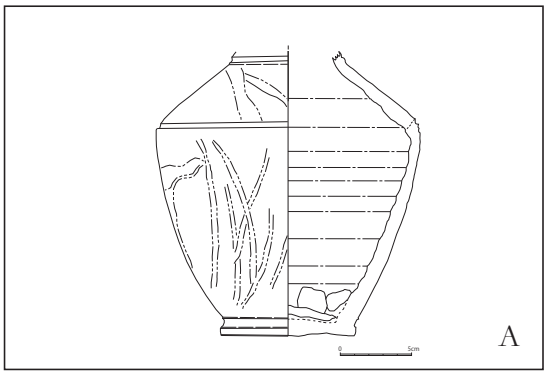


Fig. 34: Drawing of unearthed Khmer stoneware from the south of south sanctuary

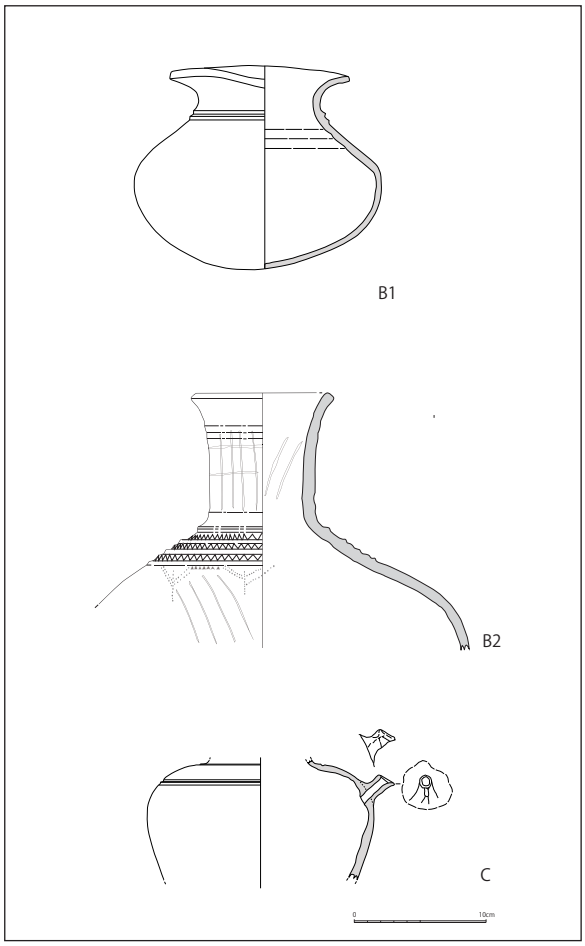


Fig. 35: Drawing of unearthed earthenware from the south of the south sanctuary

Fig. 36: Unearthed earthenware jarlet with cremated bone fragments from Buddhist Terrace

8. Society and Religion in the late Angkor period

8.1. Transition to Theravāda Buddhism

Concerning the timing of the installation of Theravāda Buddhism into Angkor, recent studies provide several hypotheses (Thompson 2020). Although it is believed that Cambodia had direct connections with Ceylon by at least the twelfth century (Kanai 1982), concrete evidence for the existence of Theravāda Buddhism in Angkor might exist in the epigraphic record. Since the first known bilingual inscription using Khmer and the Pāli language is dated 1309A.D., K.754 from Kok Svay Chek (Coedes 1936). The inscription K.768 from Prasat Kombot (Pou), which is written in Sanskrit and Pāli can be dated to the reign of Srīindrajayavarman (1307-1327 A.D.) and the inscription K.888 from Preah Khan Kompong Svay in the 14th century, which is documented in Pāli are also early Pāli inscriptions in Cambodia.

The iconographic images of the pediments at Western Prasat Top show the seated Buddha in the common Theravādin pose of *māravijaya*. The Buddha images on the false doors of the North Sanctuary and the Buddha images on the pediments, indicate that Western Prasat Top is possibly linked with Theravāda Buddhism.

Meanwhile, although of unknown date, an inscription decorative sandstone was unearthed from Western Prasat Top in 2012. It was found in close proximity to the *sīmā* stone in the center of the south side, placed in a 10cm recess in the ground surface. It has a decorative contour in the shape of lotus petals, and it was found with a rectangular mortise in the top surface (Fig.37, 38). Judging from the character type, it can be dated from between the last years of Angkor to the middle period. The inscription is "*dakkhīṇe kassapo buddho*" i.e. "Kasapo Buddha in the south" (Sato 2015). Furthermore, two more fragments of decorative sandstone with inscriptions were discovered among scattered stones. One can be read as "*P(B)acca"* i.e. "West" (Fig. 39) and the other can be read as "…*kyamuṇ"* i.e "….*kyamuṇi*" which might indicate Sākyamuni (Sok 2015) (Fig. 40). It can be said these inscriptions were related with the past canonical Buddhas of this eon: Kakusandha, Koṇāgamana, Gotama and Kassapa. The four past Buddhas of the present era, in particular, are frequently associated with the four directions and Kassapa Buddha is normally positioned in the south.

Fig. 37: Unearthed decorative stone with inscription (left: top face, right: inscribed face)

*Fig. 38: Inscription:dakkhīṇe*kassapo buddho

Fig. 39: Inscription: pacca

Fig. 40: Inscription: kyamuṇi

As mentioned above, this sandstone artefact was unearthed from near the *sīmā* stones situated in the central part of the south laterite enclosure; it might have been placed there with a conscious awareness towards the south direction. Nicolas Revire mentioned that the philosophy of four past Buddhas associated with the four directions can be confirmed in a *paritta* hymn found from Sri Lanka (Revire forthcoming). There is a possibility that the other two fragments with inscriptions might have been placed in certain positions such as *Pacca* in the west and *kyamuṇi* in the north, based on the philosophy of the past four Buddha's with cardinal directions. In this respect, the recent discovery can be said to be an invaluable example of the complexity of Buddhism in the later years of the Angkor period.

8.2. Date of Construction of the North Sanctuary

Here, it is necessary to consider the date of construction for the North Sanctuary at Western Prasat Top. As described in Section 3-4, the radiocarbon dates of the six excavated carbon samples from the bottommost layer of the underground brick chamber were found to be within the range of the early 14th to early 15th century. Excavation results suggest that soils in the underground brick chamber were not deposited naturally or a long period of time after the fire ritual, but were buried with sand and then built on top of to form the base of the North Sanctuary and its structure. The three standing Buddha images on the false door, including the "Walking Buddha" on the north, were not altered in later times, but are thought to be carved at the same time with the construction of the North Sanctuary in the early 14th to early 15th century.

8.3. Summary

The numerous pieces of evidence found at the North Sanctuary of the Western Prasat Top Site have provided a great deal of new knowledge. As a result of the restoration project, a "Walking Buddha" style image was restored on the north side, in addition to the standing Buddha image on the south and west sides. This provides direct evidence of the close relationship between north Thai and Angkor, where the Walking Buddha was popular.

Another major discovery, the underground brick chamber, provided a great deal of information. Artifacts such as metalwork, including gold products, glass, minerals, burnt bones, and carbonized wood were found. Glass, especially in addition to beads made from Chinese lead as a raw material, and blue glass with a cobalt colorant which came from the west, were excavated and are notable. Analysis of the burnt bones showed that they were identified closely as human, which is a key to solving the meaning of the brick remains. The large amount of carbonized wood, and the sooty floor and walls, suggest that a fire ritual took place in the brick remains. The excavated carbonized material provides a chronology assigned to the early 14th to early 15th century. These unearthed artefacts reveal that Angkor at that time had an established network of dynamic exchange not only with neighbouring countries but also across Asia.

The condition of the excavated artefacts suggests that the site was not subjected to fire for long periods of time at high temperatures, and only the lower part of the brick remains were sooty, which precluded the repeated use of fire for many times over a long period of time.

Based on the results of the analysis of these artefacts, it is suggested that cremation may have taken place in a ritual involving fire in the underground brick chamber although it is necessary to continue to investigate the other functions of this chamber. There have been many cinerary vessels containing cremated bones at Angkor, but no cremation remains have ever been found at the site. We have confirmed cases of sub-surface remains found in the underground chambers of sanctuaries at Angkor and related sites, but we could not confirm the discovery of thermal subsurface remains. Therefore, the discovery of the North Sanctuary can be considered a very rare case.

At the time of the construction of the North Sanctuary, Theravāda Buddhism might already have been introduced to Angkor. Western Prasat Top is assumed to be influenced by transitional Theravāda Buddhism in some aspects - judging from the element of the structure and iconography of the temple. The various archaeological traces found here suggest complex and multi-layered cultural evidence for the late stage of Angkor. We plan to continue our research at Western Prasat Top to view the study from all its angles.

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A RESOURCE MANAGEMENT STRATEGY IN THE ANGKORIAN STONEWARE INDUSTRY

Yukitsugu TABATA

ABSTRACT:

Intensive archaeological excavation of ancient kiln sites in Cambodia — never conducted in the pre-civil war period — has enabled us to start detailed studies of Khmer stoneware. Although unearthed kilns and numerous artifacts provide clues to understanding the distinguished and unique skills of ancient Angkorian potters, carbonized woods from kiln sites have not been fully examined, except for dating purposes, and thus our understanding of fuel management for the Angkorian stoneware industry is limited. Therefore, in this paper, reconstructing Khmer stoneware-making techniques, especially resource management of fuel based on collected carbonized wood from kilns in Angkor will be examined.

Identification of taxa by microscopic analysis shows that all samples are classified into the different genus and family of the broadleaf tree. The utilization of miscellaneous trees does not seem to have been a strictly controlled resource. Angkorian potters probably selected a resource strategy of collecting many species of locally available wood rather than preparing specific tree plantings for fuel that is sometimes observed in East Asian pyrotechnology. If we designate the latter type of resource strategy as a highly controlled resource strategy, the strategy used for Angkorian kilns would be a kind of *bricolage.*

1. Introduction

Beautiful translucent greenish or semitransparent brown glazed stoneware with distinctive forms — so-called Khmer stoneware ceramics — is a category of high-fired stoneware mainly produced in the pre-modern Khmer territory and generally unearthed from Angkorian monuments.

In the past two decades, intensive research on ancient kiln sites in Cambodia has enabled

detailed studies of Khmer stoneware.Following the discovery and excavation of the Tani kilns in 1995, several full-scale archaeological excavations of stoneware kilns in the Angkor area — including Anlong Thom, Sar Sei, Khnar Po, Bangkong — along with the stoneware kilns in the area east of Angkor, have been undertaken (Aoyagi and Sasaki 2007, Miksic, Chhay Heng et al. 2009, Nara National Research Institute for Cultural Properties 2017, Osaka Othani University Museum 2009, 2010, Sugiyama et.al. 2008, Tabata 2008a, b, 2010b,).

The chronological positions of unearthed stoneware kilns rely on 14C dating of carbonized wood collected from the firebox or waste heaps, and thus, these woods are regarded as fuel for the kiln. Through these investigations, species identification of these woods — which was outsourced to a Japanese commercial laboratory — shows a unique tendency for the selection of woods for fuel (Hashimoto, Chiba, Yahagi et al., Kuronuma 2017). Therefore, the author would like to examine the resource management strategy of the stoneware industry of Angkor, based on the identification of carbonized woods from kilns.

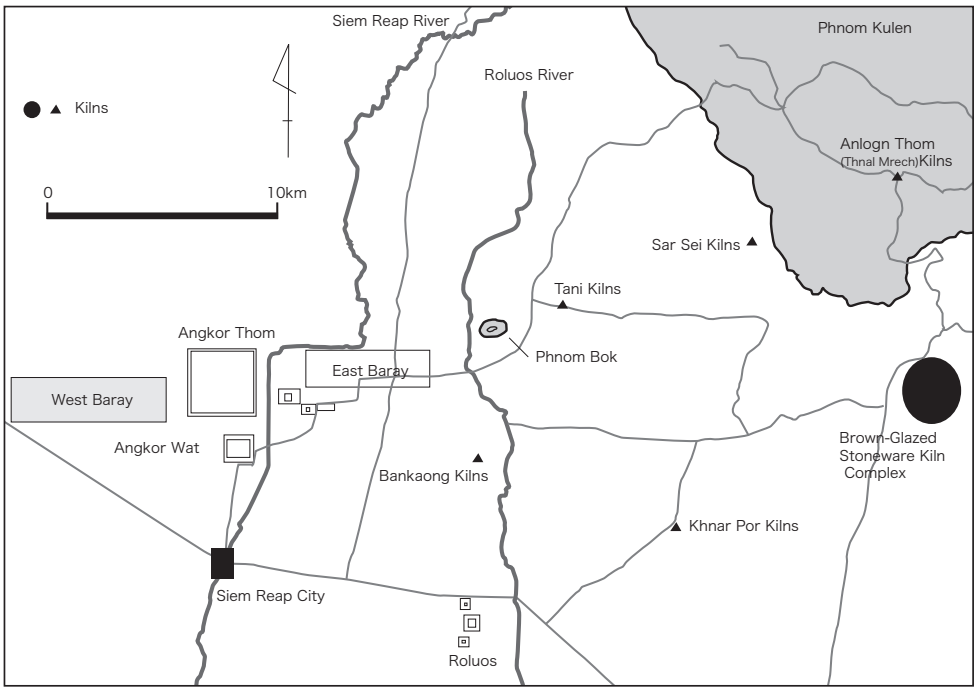

Fig. 1 Representative Khmer Stoneware Kilns in Angkor and east to Angkor

2. Method and Materials

Species identification was conducted on the carbonized woods unearthed from three kilns in Siem Reap Province (Fig. 1). Carbonized wood retains its anatomical structure and can

be used for species identification. Thus, the species of carbonized woods were identified by using scanning electron microscope analysis. The collected samples were carefully sliced into three thin sections—cross section, radial section, and tangential section — of wood tissues and observed with the microscope.

All of the carbonized wood specimens were collected from either the firebox (stoking port) or waste (ash) heap of the excavated kiln. The identification analysis was conducted on the following kilns: Tani, Anlong Thom (Thnal Mrech) and, Veal Svay.

Tani

The excavation of the Tani kilns was a turning point in Khmer stoneware studies after the Cambodian Civil War. The kiln was identified in 1995 and archaeological investigations carried out from 1996 to 2002 as a joint research project of the APSARA National Authority (Cambodia), Sophia University (Japan), and Nara National Research Institute for Cultural Properties (Japan). The kilns are composed of five groups (groups A to E) with all kiln mounds constructed on an artificial dyke. The kilns B1 and B4, of Group B, were excavated by the APSARA-Sophia team, and kiln A6 in Group A was excavated by the APSARA-Nara team (Aoyagi and Sasaki 2007, Nara National Research Institute for Cultural Properties 2005).

Seven samples of charcoal fragments (Sample Nos.1~7) were collected at Kiln B1 and B4. Species identification by microscopic analysis, and C14 dating, were conducted by PALYNOSURVEY Co., Ltd.

Anlong Thom (Thnal Mrech)

This kiln group is one of the oldest known Angkorian kilns in Cambodia, located on Phnom Kulen (Hill of the Lychee Tree) — one of the political and religious centers of early Angkor. It has been known since the end of the nineteenth century that kilns existed close to Anlong Thom village in Phnom Kulen and thus this kiln is known as the Anlong Thom kiln. The first excavation of the kiln (Anlong Thom Kiln 01) was carried out as a joint research project by the author and APSARA National Authority from December 2006 to January 2007 (Tabata and Chay 2007, Tabata 2008b). Shortly after our investigation, another kiln in this area was investigated by the National University of Singapore and APSARA National Authority, and was reported as the Thnal Mrech Kiln 02*.

Three carbonized wood fragments were collected from the firebox of Anlong Thom Kiln 01 for C14 dating and species identification, conducted by the PALYNOSURVEY Co., Ltd.

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* The research team of the Thnal Mrech kiln claims that it is more appropriate to use the term Thnal Mrech because the name of Anlong Thom covers a fairly sizeable area, but there is a specific kiln located in Thnal Mrech (Miksic, Chhay Heng et. al 2009, 2). Although, before their excavation, a number of articles which cannot be ignored has referred to the kiln in Anlong Thom. Thus, to avoid confusion with former studies, Anlong Thom should be adopted for the name of the kiln in this paper.

Veal Svay

The Veal Svay kiln is one of the newly discovered ancient kilns located east of the Angkor area, where new brown-glazed stoneware kilns along the royal road from Angkor to Preah Khan of Kampong Svay were found (Hendrickson 2008). Following this discovery, several kiln groups including the Torp Chey, the Chong Samrong and, the Veal Svay and the Veal Kok Treas kilns have been investigated by international research teams. Among them, excavation of the Veal Svay kiln was carried out from 2013 to 2015 as a joint research project of the APSARA National Authority, Waseda University, and Nara National Research Institute for Cultural Properties.

A carbonized wood sample was collected from the firebox from the kiln. C14 dating and species identification were conducted by Paleo Labo Co., Ltd .

3. Results of the identification

The results of each kiln are shown in the chart below and Fig.2-5.

No.	Kiln	Sampling Point	Taxa
1	Tani B1	Firebox	Diffused porous wood: type A
2	Tani B4	Floor of the firebox a (stoking port)	Diffused porous wood: Type D
3	Tani B4	Floor of the firebox b (stoking port)	Unidentified
4	Tani B4	Floor of the firebox c (stoking port)	Broadleaf tree
5	Tani B4	Waste Heap(T8a) Layer #25	Diffused porous wood: Type C
6	Tani B4	Waste Heap(T3h) Layer #27	Diffused porous wood: type B
7	Tani B4	Waste Heap(T3h) Layer #28	Diffused porous wood: type B
8	Anlong Thom 01	Floor of the firebox (stoking port)	Broadleaf tree（diffused porous wood）
9	Anlong Thom 01	Firebox Layer IV (stoking port）	Dalbergia latifolia Roxb.
10	Anlong Thom 01	FireboxLayer IV (stoking port）	cf. Timonius
11	Veal Svay	Waste Heap (Trench g) Layer #1	Genus Shorea – Genus Hopea
12	Veal Svay	Waste Heap (Trench g) Layer #1	Genus Gluta
13	Veal Svay	Waste Heap (Trench g) Layer #1	Diffuse-porous wood

Chart 1. Result of Species Identification

In the Tani kiln, all of the samples were identified as diffused porous wood from species of broad-leaf trees — excluding sample no. 3 which was too small a tissue sample. There were at least four types (Type A to D) of diffused porous wood, although the species have not yet been identified (Hashimoto, Chiba, Yahagi et al. 2007)

The Anlong Thom case shows interesting results. The sample no.8 is unidentified but its cell (vessel) arrangement has distinctive features of the broadleaf tree. Sample no. 9 has been identified as *Dalbergia latifolia*. It was difficult to determine the species of sample no.10 though, but according to the vessel arrangement, it seems to belong to the group of *Timoniu* – a genus of plant in the family *Rubiaceae. Timoniu* is a broadleaf tree distributed across the tropics (Tabata 2008b).

Three groups were confirmed at the Veal Svay kiln: the genus Shorea or Hopea of the Dipterocarpaceae family (sample no. 11); the genus Gluta of the sumac family (sample no. 12); and, a diffuse-porous wood of an unknown genus (sample no. 13). Some of the carbonized wood is thought to be between two of five years' worth of growth rings however, this is not certain as the boundaries of the rings are unclear (Kuronuma 2017).

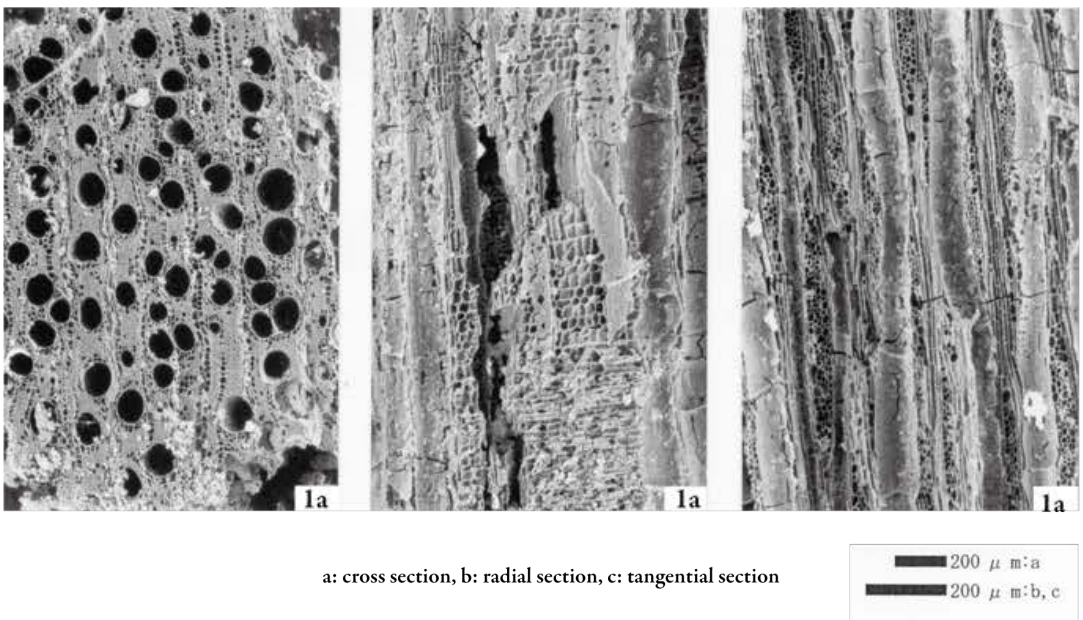
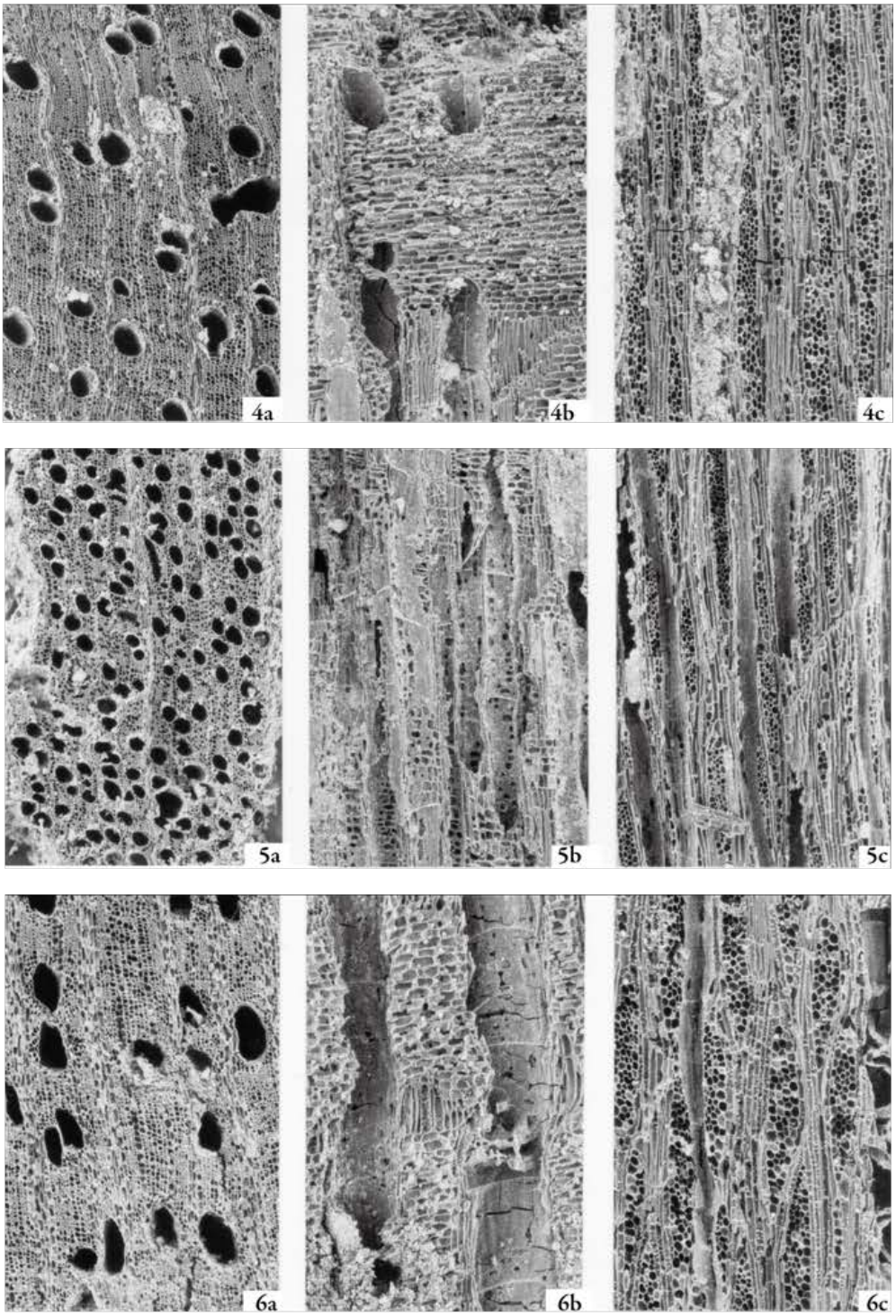
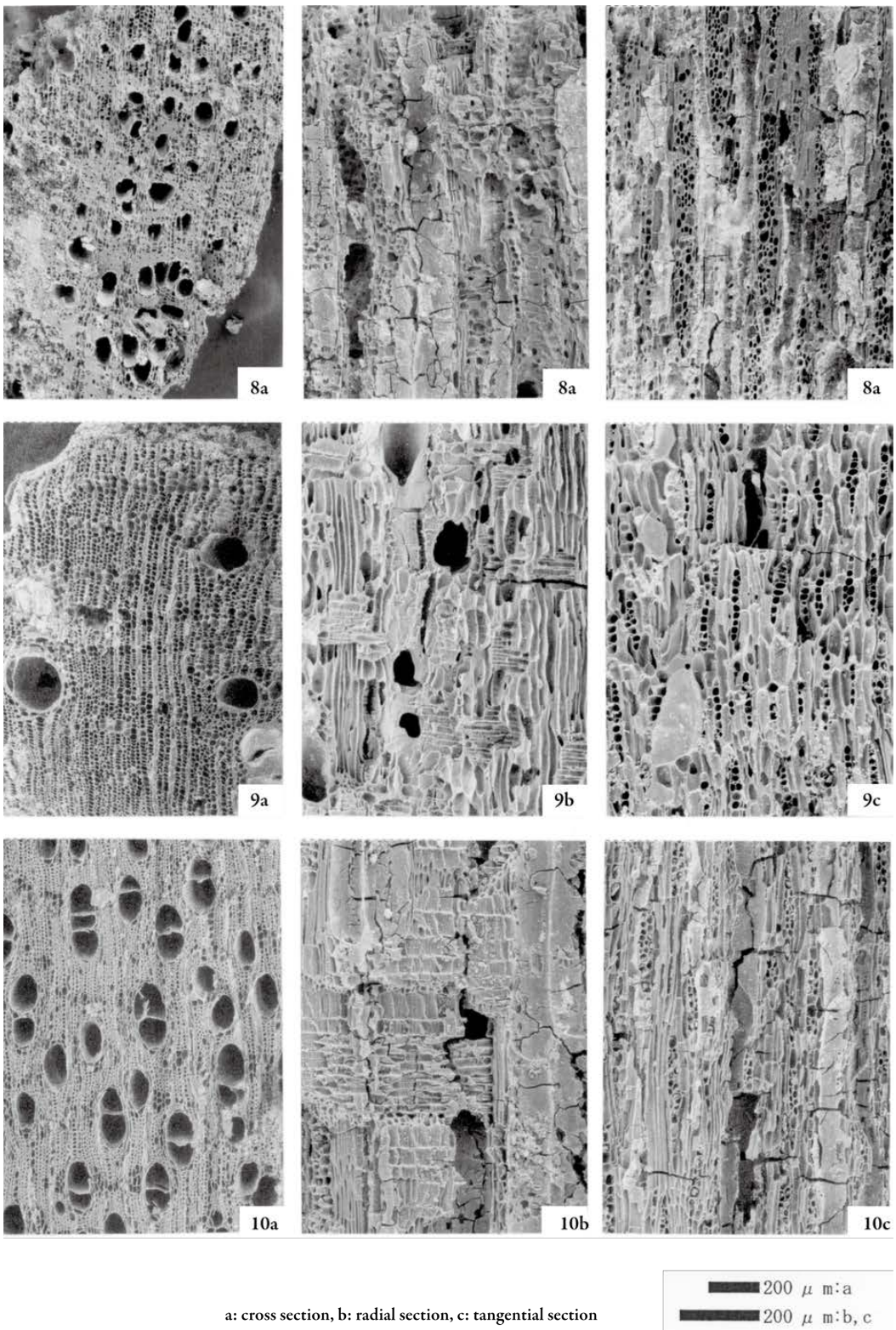


Fig. 2 SEM photos of the carbonized wood samples



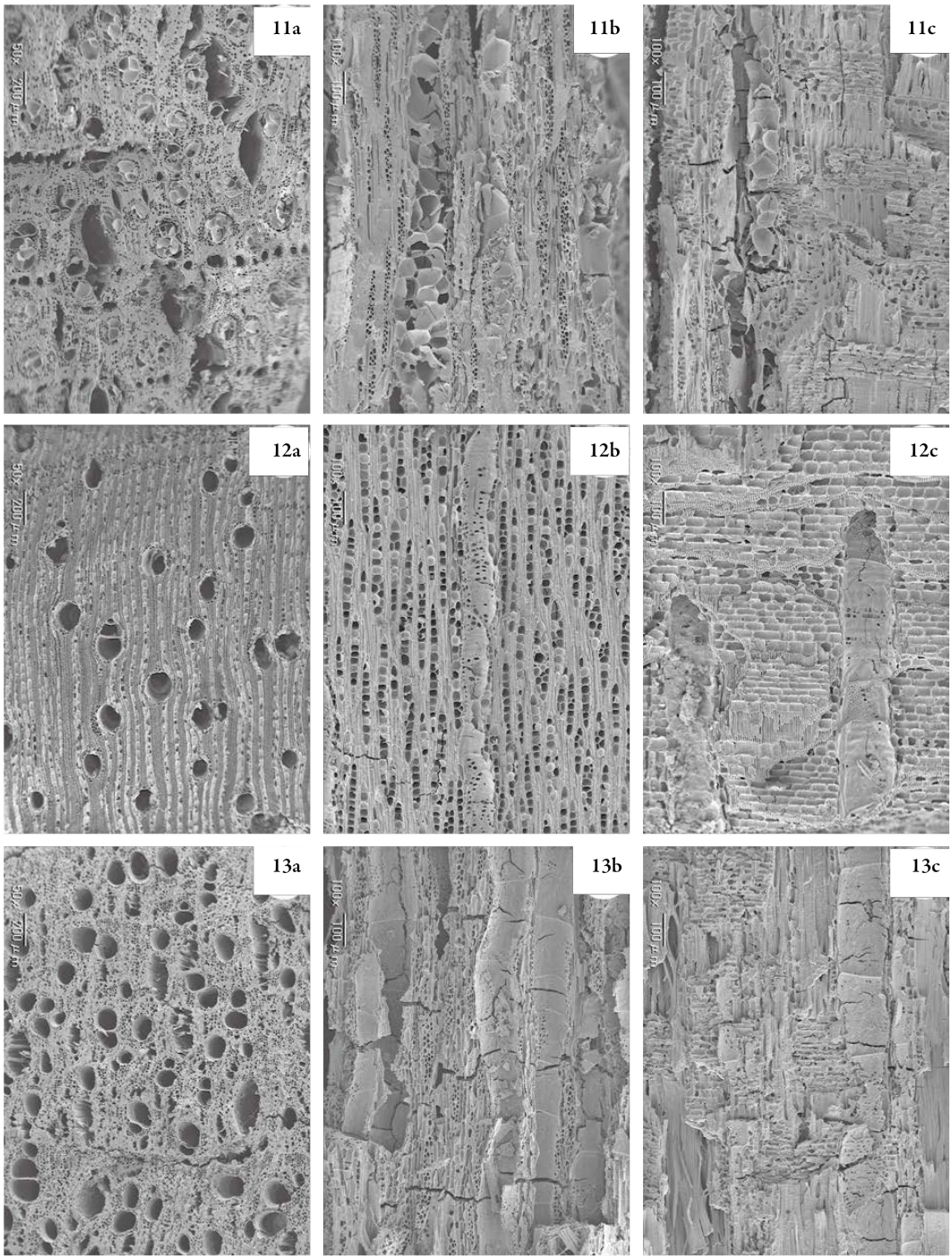
a: cross section, b: radial section, c: tangential section

Fig. 3 SEM photos of the carbonized wood samples



a: cross section, b: radial section, c: tangential section

Fig. 4 SEM photos of the carbonized wood samples



a: cross section, b: radial section, c: tangential section

Fig. 5 SEM photos of the carbonized wood samples

4. Conclusion: Resource Strategy as *Bricolage*

The results of identification are not surprising from the botanical viewpoint. In general, the plains of mainland Southeast Asia comprise a rain-green forest of trees that foliate during the rainy season and defoliate during the dry season. In forests in this region, trees of the *Dipterocarpaceae* family are predominant, and such trees, including those of the genus *Shorea* and *Hopea* analyzed in this recent survey, have been widely used as timber in modern times (Sudo 1966). The genus *Gluta* is a group of evergreen or deciduous trees of medium to tall height, or shrubs that range from large shrubs to small trees. They are only moderately hard as a wood material, but difficult to saw. As they belong to the sumac family, they have a toxic substance that causes a rash, but the sap of some species is used in paints and dyes (Kuronuma 2017). The samples that were analyzed are thought to be fuel wood, taken from trees growing in the vicinity of the kiln. All results seem to reflect the local flora of the area.

Based on these analyses, the fuel management shows a strongly unique resource strategy. The results of identification include several woods which seem unfit as fuel for kilns. For example, smoke from burning *Gluta* wood (Veal Svay) will sometimes cause a rash (Hirai, 2005), and it is difficult to imagine that they were actively used as fuel wood. Rather, they were probably used for fuel after collecting their tree sap. Moreover, as mentioned above, sample no. 9 (Anlong Thom) was identified as *Dalbergia latifolia. Dalbergia* is known as Rosewood, a tropical timber for various uses. It sounds strange that a timber wood was used as fuel in the kiln. However, it is not a big problem whether this sample is rosewood or not. The most important result is not each species but the fact that all samples are classified into different genus and families of broadleaf trees.

Louise Cort estimated the use of a variety of local woods for kiln firings (Cort 2000). The results of our identification support her idea. Moreover, the wide variation of fuel leads us to hypothesise on the resource strategy of the Khmer stoneware industry. The utilization of miscellaneous trees does not seem to use strictly controlled wood resources. Angkorian potters probably applied a resource strategy of collecting many species of locally available wood rather than prepare specific tree plantings for fuel, as is sometimes observed in East Asian pyrotechnology (Kobayashi, and Kitano 2013). If we could desi gnate the latter type of resource strategy as a highly controlled resource strategy, the strategy seen in the Angkorian kilns would be a kind of *bricolage.*

Based on the above, we hypothesise that a resource strategy of *bricolage* is utilized for the Angkor stoneware industry. The excavation of the kilns facilitated an understanding of the structure of the kiln and its products. Also, the sites enable us to understand the unique nature of the ancient potters' exploitation of the tropical forest.

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PRELIMINARY RESULTS FROM THE SURVEY AND EXCAVATION OF BUDDHIST TERRACES/PRAḶ VIHĀR AT ANGKOR THOM[1]

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University of Toronto

The late- and post Angkorian Periods (c. 13th-16th centuries) are marked by a dramatic shift in religious architecture thought to accompany the gradual transition of Khmer society towards Theravāda Buddhism. *Prasat*, once the focal points of "Hindu" Angkorian politico-religious social structure and urban development, were replaced by *praḥ vihār*, wooden Theravāda prayer-halls built on stone foundations surrounded by *sīmā* known as "Buddhist Terraces", as the main centers of worship and community during this period. Upwards of over seventy Buddhist Terraces alone were constructed within Angkor Thom, the final Angkorian capital center, which represents the most significant campaign of religious construction and landscape transformation since Jayavarman VII (r. 1181-1218 CE) and included the conversion of many earlier Hindu and Māhāyāna Buddhist temples. This paper provides a preliminary synthesis of structural, spatial, and excavation data collected during the first three seasons of fieldwork of the Angkor Vihara Project, a collaborative campaign between the University of Toronto and APSARA National Authority, in order to map the development and spread of *praḥ vihār/*Buddhist Terrace construction and temple conversion across Angkor Thom and Central Angkor.

Keywords: Angkor Thom, Khmer Empire, Theravāda Buddhism, Landscape, Architecture, GIS

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Introduction[2]

The Angkorian Empire, one of the most powerful political entities to have existed in medieval Southeast Asia, witnessed the introduction and eventual state patronage of Theravāda Buddhism as a prominent religion during the 13th century. A product of cultural exchange with Mon polities such as Dāravatī and Lopburi (Lavo) on the western frontier of the empire (Dupont 1959: 263; oodward 1997: 72), Theravāda Buddhism gradually supplanted Śaivism and Māhāyāna Buddhism as the predominant religion of the Angkorian state and was incorporated into the existing Angkorian politico-religious social order (although eventually to supplant it). Religious plurality at Angkor is echoed by Zhou Daguan's observation of three faiths (Brahmanism, Śaivism, and Buddhism) in the court of King Indravarman III (r. 1295-1308 CE) during the late 13th century, but his descriptions of monasteries and Indravarman's Buddhist fervor illustrate a kingdom in the midst of a religious transition. K.754/1309 CE from Wat Kok Kphos, the Angkorian Empire's first Pāli[3] inscription, marks the first voluntary abdication of a ruler for the life of a *bhikkhu* alongside his dedication of several monasteries for *bhikkhu*s/monks neighboring villages. In addition, the dedication of the Mṇgalārtha in 1295 CE (K.567) marks the final episode of temple dedication (and thus construction) thus far identified at Angkor.

Division of Angkorian history into strictly-delineated religious "epochs" by colonial-era epigraphers such as Coedès and Finot has invited hypotheses that Theravāda Buddhism drastically shifted the politico-religious and social orders of the Angkorian Empire, along with the stability of the Khmer state itself. Lacking new temples, which have been interpreted as physical manifestations of a core-periphery worldview representative of elite religious hierarchies, patterns of urban settlement, and local economies (Evans et al. 2007, 2013; Hall 1992; Pollock 2006; Fletcher et al. 2017), Theravāda Buddhist construction at Angkor is thought to represent the transition towards a less sophisticated stratification and organization of society. Alternatively, Theravāda construction has often been perceived as an epilogue within Angkorian history, ascribed to the rediscovery of Angkor by King Ang Chan (r. 1516-1566 CE) from Longvek, whose successors restored Angkor Wat (and possibly also Phnom Bakheng) as an important Buddhist pilgrimage site (Groslier 1958; Lewitz 1970-1971; Thompson 1996, 2004); however, recent scholarship and radiometric dates suggest that much of Angkor Thom's Theravāda construction took place during the late Angkorian Period (see Castillo et. Al 2018; Lèroy et al. 2015). Although Theravāda Buddhism has now been disavowed as a direct cause of Angkor's decline, the adoption of this religious tradition indeed coincided with other highly

[2] This research was made possible by the Robert H. N. Ho Family Foundation Dissertation Grant (ACLS), the William John Wintemberg Fieldwork Fund, the Explorer's Club Mamont Scholarship, and the SGS Research Travel Grant and Archaeology Centre Student Research Fellowship from the University of Toronto.

[3] The canon language of Theravāda Buddhism through its use in Sinhalese traditions.

cataclysmic events within Angkor's final centuries. These events included the rapid expansion and 1431 CE attack by the Siamese Kingdom of Ayutthaya (1350-1767 CE) (Vickery 1977, 2004) following significant losses of Angkorian territory to the earlier Kingdom of Sukhothai (c. 13th-15th centuries) in Northern Thailand. In addition, patterns of megadroughts and megamonsoons during this period caused extensive damage to Angkor's sophisticated hydraulic system, which combined with a drastic drop in population between the years of 1250-1350 CE supposedly led to a breakdown of the low-density agrarian urban landscape which had once provided Angkor with quarter-annual bountiful harvests (Fletcher 2008; Fletcher et al. 2017).

Scholarship investigating Angkor's decline has thus neglected further studies of socio-politico continuities between religious "epochs", as well as how the Theravāda Buddhist reconciled with an existing politico-religious infrastructure built to serve a shared Brahmano-Buddhist (Śaiva, Vaiṣṇava, and Māhāyāna) worldview. Ongoing survey and excavation work by the Angkor Vihara Project (AVP) have revealed a vast landscape of Theravāda Buddhist prayer halls, or *praḥ vihār*, within Angkor Thom, the capital center of the great king Jayavarman VII (r. 1181-1218 CE), and Central Angkor, the focal point of the Angkorian Empire from the reign of Yaśovarman I (r. 889-910 CE) onwards. These monastic buildings were constructed entirely from wood with tile roofs and have not survived in Cambodia's jungle climate, but are marked by square tiered foundations in stone known as "Buddhist Terraces" in Angkorian scholarship. This paper serves as an assessment of Buddhist Terrace architecture and spatial analysis, and employs data from survey, site clearance, and test-pit excavation collected between 2017 and 2019 to verify the observations and results presented below.

Buddhist Terrace Research History and Angkor Thom

The EFEO-based *Rapports des Activités de la Conservation d'Ankor* (1908-1972) and the *Journaux des Fouilles* (*JF*) field journals (1909-1956) are some of the only surviving sources specifically documenting Buddhist Terraces across Angkor. Additionally, Henri Marchal's *Monuments Secondaires et Terrasses Bouddhiques* (1918) served as the sole publication on Buddhist Terrace architecture for over a century (see A. Harris 2019), although some were originally documented by early surveys by Aymonier (1900-1904) and Boat and Ducret (1909, see Lajonquière 1902-1911). Documentation by Marchal in the *JF* on smaller, less prominent religious monuments were evidently not a priority for early conservators and archaeologists (see Pottier 1999: 21, fn. 2), whose mandate focused primarily on the restoration and excavation of Brahmano-Buddhist temple-complexes. Still, these early folios and archival photographs indicate that some attention was given to Buddhist Terraces due to their statuary.

While some Buddhist Terraces were documented at satellite temples in the proximity of the capital, for example Wat Preah Khan (*JF* 08: 74-75), Wat Banteay Kdei (Courbin 1988; Sophia 2003: 37-51), and a series of unidentified structures to the west of the 9th century temple

of Phnom Bakheng, past research on these structures was primarily undertaken within Angkor Thom. This 3x3m walled citadel was conceived by the Māhāyāna Buddhist king Jayavarman VII (r. 1181-1218 CE) as a hub of politico-religious authority and the centerpiece of his transformation of the Angkorian landscape to suit his Māhāyāna Buddhist worldview (Hall 2011: 198). The capital was thus envisioned as a physical representation of the Churning of the Ocean of Milk, with bridges lined with *devas* and *asura*s pulling the *nāgā* Vasuki through five entranceways (*gopura*). The enigmatic Bayon Temple, a temple-mountain constructed in the earlier mode of Angkorian rulership, formed the churning post Mount Mandārāchala, and additionally served as the ceremonial center of Jayavarman's empire (Clark 2007; Williams 1992). This capital center also incorporated the earlier Royal Palace of Sūryavarman I (r. 1006-1050 CE), which was extensively renovated under Jayavarman's rulership (Pottier 1997; Jacques and Freeman 1999). Angkor Thom also incorporated the Victory Gate Road, an ancient thoroughfare which connected the East Baray reservoir to the eastern foot of the palace; this road is thus the only one of the five arterial roads not cardinally-aligned with the Bayon. Urban habitation and development in Angkor Thom was additionally shaped by an orthogonal road-grid which divided the urban space into rectangular blocks, mapped by Gaucher between 1994-2006 prior to the implementation of LiDAR (Gaucher 2004a; A.Harris 2019: 38-40).

Keeping in line with the tradition of cosmic renewal of the Angkorian heartland which accompanied the ascension of a powerful ruler (Wolters 1982), Angkor Thom was the final capital center established within Central Angkor (see Stern 1951). It held in this position until the 15th centuries, likely due to Jayavarman VII's incorporation of so much of Central Angkor's original ceremonial core; thus, it proved unfeasible to build another capital elsewhere rather than convert or vandalize his Māhāyāna monuments during the 13th century resurrection of Śaiva worship (see Coe and Evans 2018: 258-261). As such, new Theravāda Buddhist religious construction at Angkor primarily took place within its walls, and the number of Buddhist Terraces built within Angkor Thom consequently outnumber those constructed in any other complex by an exponential amount (Figure 1). As host to three distinct pluritemporal religious traditions defined by architectural and iconographical variation (Śaivism, Māhāyāna Buddhism, and Theravāda Buddhism), Buddhist Terrace construction was clearly required to fit certain perceptions of religious architecture and politico-religious authority. I touch on many of these themes below.

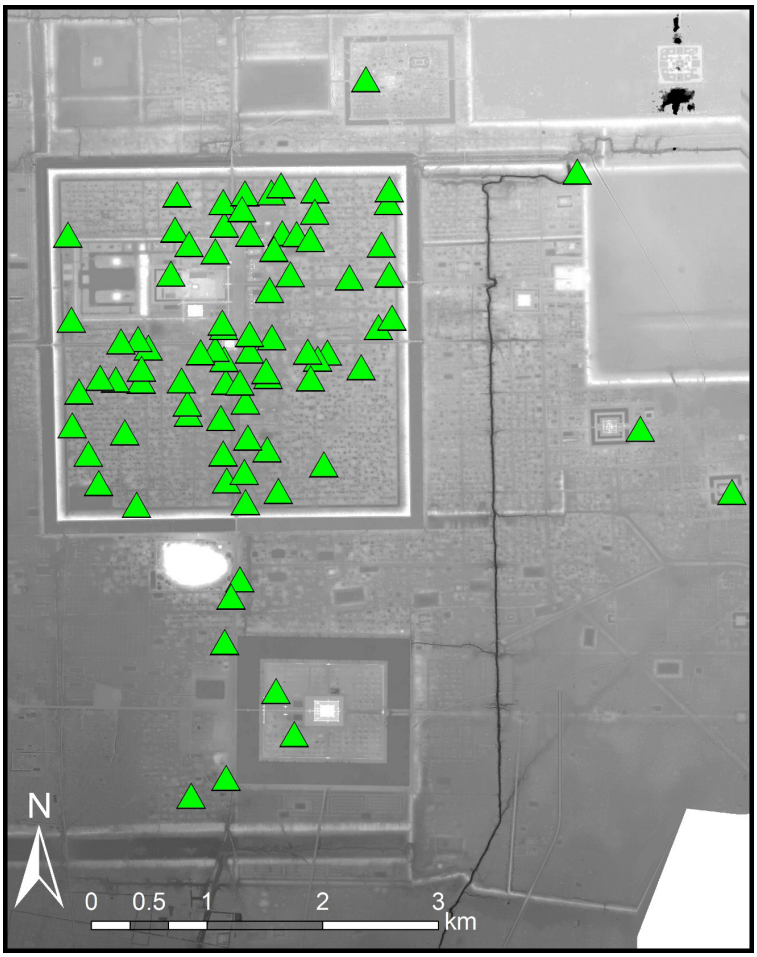
Fieldwork Methodology

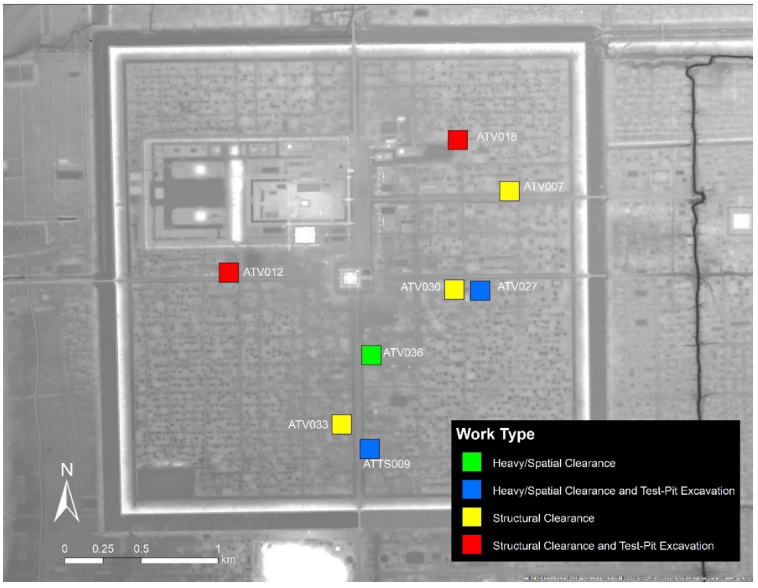
A ground survey of Angkor Thom and Central Angkor was completed between 2017 and 2018. This survey utilized colonial-era French maps (Marchal 1918; Trouvé and Marchal 1935), documentation from the EFEO *Journaux des Fouilles* (EFEO 1909-1956), Jacques Gaucher's *Schéma Directeur Archéologique D'Angkor Thom* (2004b), and LiDAR imagery

graciously provided by APSARA National Authority (Evans et al. 2013) to both georeferenced and catalogue each structure. Cataloguing work documented the dimensions, materials, floorplans, renovation phases, spatial alignments, funerary-reliquary monuments (*stupa* and *chedi*), proximate hydraulic features (*trapaeng* or *srah*), and physical boundaries such as earthen embankments associated with each Buddhist Terrace. In 2018 this work was expanded to include Buddhist Terrace sites previously identified outside of Angkor Thom, including GT83 (Brotherson et al. 2014), Angkor Wat (Coedès 1918), and Buddhist Terraces identified at several Jayavarman VII-era sites such as Ta Prohm, Preah Khan, and Banteay Kdei (Chamrouen 1998; Sophia 2003). During this survey work, it made sense to reconcile the numerous typologies established within prior scholarship. *Sīmā* stones, which are indicative of the structure's ritual functions (see below), were chosen as the primary site classification diacritic. Thus, *praḥ vihār* with *sīmā* were labelled ATV (Angkor Thom *Vihar*) and those without were labelled ATTS (Angkor Thom Terrace Structure). Fifty-nine (59) ATV structures and thirteen (13) ATTS structures were identified during survey.

In 2019 we were given permission to complete vegetative site-clearance of eight (8) sites within Angkor Thom as part of a collaborative campaign between APSARA National Authority and the University of Toronto (AVP). Following clearance, we completed an inventory of statuary of each site, analyzed masonry, and maps and models each structure using a Total Station, Agisoft Metashape, and Meshlab (see Figure 3). We also excavated eight 2x1- 2x2m test-pits across four sites (Figure 2). Apart from verifying structural observations documented during survey, our goals through excavation were to determine the floor-level of each structure, identify structural foundations, investigate evidence for the superstructures of each edifice, verify renovation phases at specific monuments, excavate datable matter, and establish sites to conduct larger-scale excavations during future AVP campaigns[4].

[4] Our investigation of the chronology of *praḥ vihār* construction and occupation through radiometric analysis is still ongoing.





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Buddhist Terrace Description

Praḥ vihār, known in Sanskrit and Pāli as *vihāra*, have served as the center of worship and congregation within Buddhist monasteries across Asia since at least the 2nd century CE (Fogelin 2003; Schopen 1991). Consequently, *praḥ vihār* comprise arguably the largest collection of religious remains identified in Central Angkor, and like temples played a central role in the daily lives of the communities which surrounded them.

In introducing and analyzing Buddhist Terraces, it is important to first note that these substructural remains constitute only a small percentage of any *praḥ vihār*. Due to Cambodia's humid climate, the roof, paint, plaster, support-beams, pillars, wooden floorboards, ritual vessels, metal decorations, religious texts, and wooden Buddha statues comprising the sanctuary's superstructure have all been destroyed, and the form and height of the original *praḥ vihār* can only be tentative reconstructed today. While it is likely that these superstructures resembled the roofs and walls of modern Cambodian monastic buildings, it is worth noting that Śaivaite and Mahāyāna Buddhist shrines found in the Second Enclosure of the Bayon also feature bas-reliefs of elaborate wooden buildings. The similarities in form and design between these bas-reliefs and modern structures, illustrated by Giteau (1975: 144), indicate that Buddhist Terraces may have in fact been topped by similar superstructures. Thus, "Buddhist Terraces" designate the tiered substructures of Theravāda Buddhist *praḥ vihār/*prayer halls, and the distinction between these two terms should be maintained (Figure 3a, b).

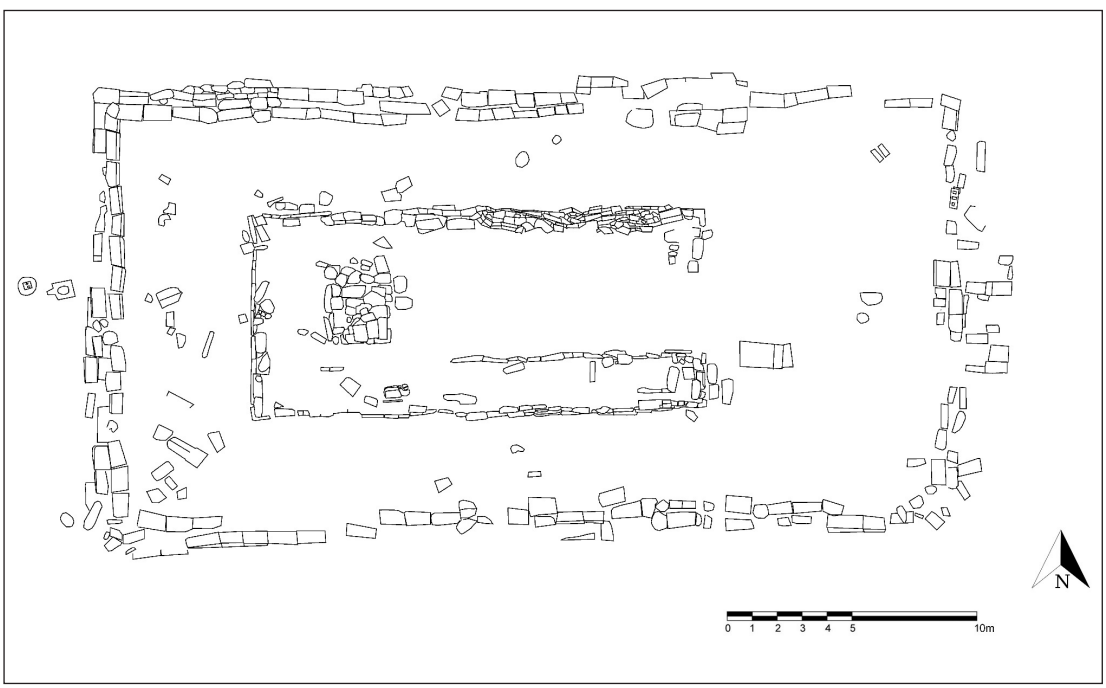

Figure 3a: Site Drawing of Buddhist Terrace ATV007 (Terrasse Bouddhique No. 3)

Figure 3b: Digital Rendering of Buddhist Terrace ATV007

Buddhist Terraces were primarily constructed from laterite and sandstone blocks. Laid in courses 1-8 blocks tall measuring 0.3-1.6m in height, these walls retained a flat mound of rammed earth that would have ensured the stability of the wooden the superstructure above. A Buddhist Terrace would typically feature between 1-2 tiers of masonry surrounding this mound. In some instances, laterite foundations were encased by an upper tier of intricately-molded sandstone with a base tier of uncarved square blocks; measurements of this base tier range between 14.5x5.8m and 132x34m, and form the surface area of each prah vihār complex measured within this study. More commonly, however, an exposed laterite wall was capped with a balustrade of stone recycled from an earlier monument (Figure 4). Fired bricks were also occasionally used in construction, which are hypothesized to reflect later renovation phases (see below). Finally, several prah vihār consist solely of an earthen mound with a pedestal and sīmā, although I argue that these more vernacular structures may date to a much later period of decentralized monastic activity within Angkor Thom, possibly even postdating Ang Chan's restoration of Angkor Wat, or in fact remain partially buried.

The main ritual area of each *praḥ vihār* is accessed by an east-facing staircase measuring 0.3-1m tall **(Figures 5 and 6)**. In instances where more than one tier of architecture was constructed, staircases would rise continuously towards the Central Sanctuary and would often be topped by "guardian" statues such as *siṅha* (lions) and *nāga*. This staircase was sometimes

Figure 4: Left: Molded sandstone upper and lower tiers, ATV007 (facing east)
Right: Recycled Capstone and laterite wall, Preah Pithu Buddhist Terrace (ATV016)

All but three *praḥ vihār* identified at Angkor Thom face east, a direction derived from the alignment of earlier Śaivaite and Mahāyāna Buddhist temples (Giteau 1969 :14). The main ritual area of each *praḥ vihār* is accessed by an east-facing staircase measuring 0.3-1m tall (Figures 5 and 6). In instances where more than one tier of architecture was constructed, staircases would rise continuously towards the Central Sanctuary and would often be topped by "guardian" statues such as sen (lions) and naga. This staircase was sometimes preceded by a raised path or *mandapa* constructed in laterite blocks, as is found to the east of Tep Pranam and Terrace H/ATV012.

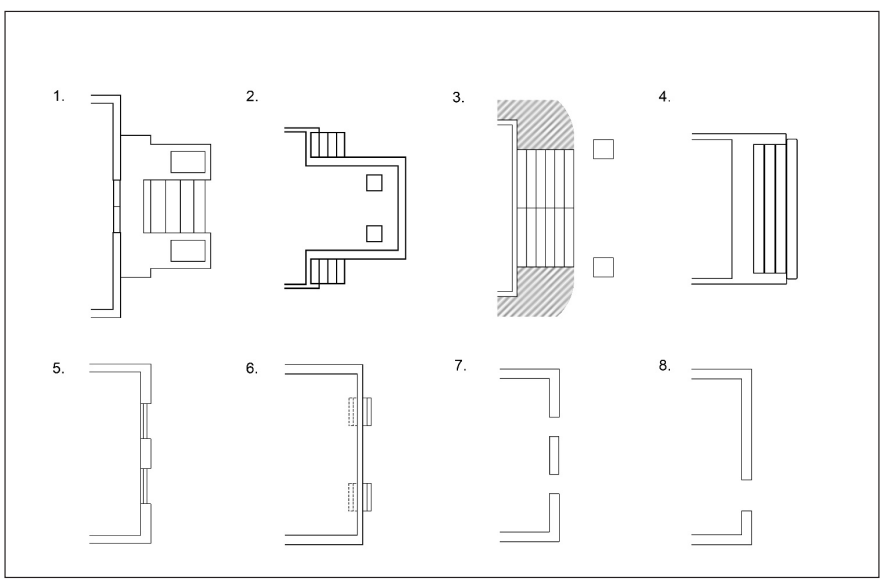

Figure 5 Porch/entranceway types of praḥ vihār across Angkor

Figure 6 Preah Pithu Buddhist Terrace (ATV016), representative of Entranceway 1 (see above)

In absence of a superstructure, the threshold of the prayer hall floor is in several instances demarcated by a row of sandstone blocks forming a threshold. The majority of these floor-spaces are now earthen and were likely originally covered with wood, but some use-surfaces were paved with sandstone flagstones, laterite cobbles, or fired bricks. A raised lateral "aisle" was sometimes constructed lining the southern edge of the floor-space, often marked by a shallow depression, which would have served as a bench or raised causeway for bhikkhu (Marchal 1918: 10) (see below).

The Central Sanctuary[5] formed the most sacred point of the *praḥ vihār,* and was typically located at the western edge of each structure's main platform **(Figures 7-8)**. This area comprised a 2x2m – 3x3.5m square pedestal with an extant average height of between 0.56-1.1m which would have originally held a large sandstone image of the Buddha. This image was rarely found in situ, but extant examples of Buddha statues at Tep Pranam (ATV008), Preah Palilay (ATTS001) and other restored terraces suggest it measured between 2-6m tall. Sculptural remains found at several sites suggest that the image would have either been positioned in earth-touching (*bhūmisparśa*) *mudrā* or as meditating *(dhyāna*) under a *nāga*. Several large outstretched palms (representing *abhaya mudrā*) carved with *dhammacakra* (Wheel of the Law) have been found amongst the statuary gathered from *praḥ vihār*/Buddhist Terrace sites. The area directly east of the pedestal often featured a series of smaller statue pedestals, measuring 0.2 - 1.25m per side. In three instances, a single 2x2m plinth stood in lieu of the more common square-block pedestal; it is likely that these larger examples were directly imported from defunct *prasat*.

[5] This area is referred to as the *bakan* by Marchal (1918: 10).

A large votive deposit of statuary, Chinese ceramics, (A.Harris & Soeng 2019), a gem-inlaid stone container known as *sīmā kil* would have been interred beneath the pedestal. Statuary pedestals placed surrounding the main Central Sanctuary pedestal would have held a series of less prominent wooden or stone statues, each of which were either originally donated to the praḥ vihār by wealthy patrons or salvaged from defunct sanctuaries and placed there as votive offerings (Stuart-Fox and Reeve 2011: 105).

Figure 7 Digital rendering of Central Sanctuary Pedestal, Preah Palilay Causeway Terrace (ATTS001)

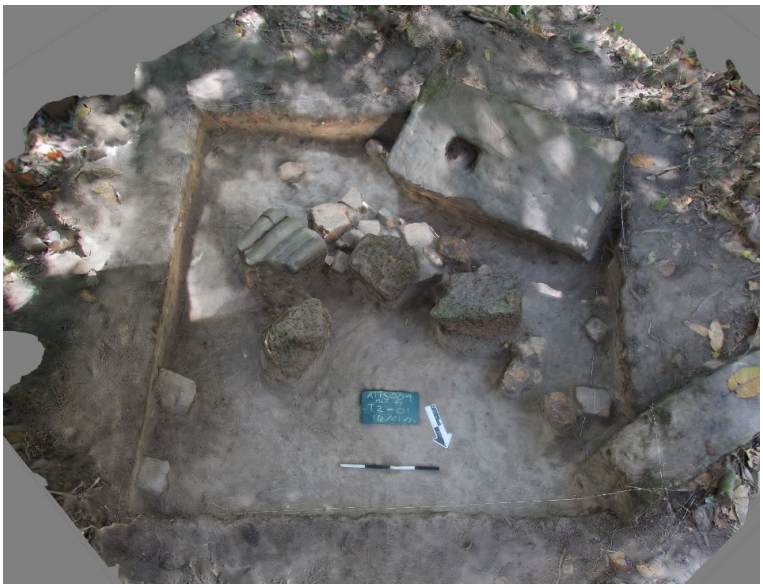

Figure 8 Test-pit ATTS009-2001, site of ruined Central Sanctuary pedestal.

. Discussed above, the most significant ritual diacritic of Buddhist Terrace are *sīmā, , a series of blessed buried votive deposits marked by an array 8x2 boundary markers (nimiṭṭa) demarcating the cardinal and subcardinal points of each praḥ vihār (Figure 9); sīmā also include the central sīmā kil* (Giteau 1969: 18; Murphy 2010: 113). According to the *Mahāvagga* in the *Vinaya Piṭaka,* the first book of the Tipiṭaka of Theravāda Buddhism's Pāli canon, *sīmā*, or *buddhasīmā,* were conceived to demarcate either a place of sacred reading (*pātimokkha)* or ordination into the *saṅgha* (*uposatha*)[6] (Mahāvagga vol. II, Ch. 7,1; cited in Davids and Oldenberg 1885: 249). Therefore, the structure surrounded by *buddhasīmā* is called an *uposathāgāra* (later known as *ubosot or bot (italicized)* in Cambodia). This Sinhalese Pāli text declares that any number of blessed objects can be used as *buddhasīmā* including mountains, streams, trees, or even city walls within a 48km^2 area (de Bernon 2003: 208-211; Murphy

[6] The *uposatha* is also the Buddhist (forthnrightly) retreat, and occurs four days per lunar month. On the first sabbath, the ordination (or confession) ceremonies of the *bhikkhu* take place (Geiger 1953: 20, fn. 2).

2010: 85-88). This process created a *khaṇḍasīmā,* a boundary which demarcated a specific space within the monastery to undertake these rites (Giteau 1969: 6-7; Murphy 2010: 88). The tradition of standardizing *buddhasīmā* through the use of stone boundary markers is thought to have originated within Mon monasteries in northern Thailand as early as the 8th century CE, which became smaller and less ornate by the 12th century (Aasen 1998: 81).

Rather than derived from an earlier Angkorian tradition, *sīmā* stones are one of the few archaeological features found within Angkor exclusive to *praḥ vihār* complexes, and ritually differentiate ATV-classified structures from similar forms of architecture distributed across the capital (ATTS). Thirteen distinct artistic types of *nimitta* were identified surrounding *praḥ vihār* within Angkor Thom, with four major types with several subtypes comprising most boundary markers (A.Harris *forthcoming*).

Figure 9 Sīmā stone, test-pit ATV027-2005 (Groupe 5)

Reconstructing the *PraḥVihār* Superstructure

Every Angkorian temple possesses evidence of wooden installations, which would have comprised small shrines, administrative structures, or wooden canopies. Many of these edifices are now marked by either raised mounds in a similar manner to domestic structures (see below) or as intrusive additions to standing masonry. For example, both Ta Prohm and Preah Khan feature evidence of post-holes embedded in the *gopura* of the fourth and fifth enclosures, which would have stabilized large pavilions or porches (Cunin 2013: 6-11). In addition, research by Chea et al. (*in press*) at the Śaivaite *Yaśodharāśrama* site of Prei Prasat has revealed the presence of roof-tiles and laterite post-holes that are indicative of a wooden superstructure. This

corroborates earlier investigations of the Western Hospital, one of the four Jayavarman VII-era hospitals found beyond each *gopura* of Angkor Thom, where excavations revealed abundant roof tiles. The roof was thus likely supported by wooden posts and covered a substructure similar in form to later *praḥ vihār* (Pottier and Chhem 2008: 177).

Within Angkor Thom, the elaborate substructural remains located in the capital's ceremonial core were evidently covered by wooden superstructures. The Jayavarman VII-era Terrace of the Elephants, for example, features post-holes embedded in the sandstone floor that suggest the terrace was originally topped by a wooden roof. The 11th-century Royal Palace, too, comprised a series of elaborate tiled wooden structures built on top of laterite foundations (P.Harris 2007: 49). Excavations completed by Gaucher have in fact excavated one of these supports (Gaucher 2004a: pl. VIII). Most significantly, the five "Cruciform Terraces" within Angkor Thom would have also been roofed. Recent studies by Uchida et al. (2013) suggest that the construction of many Cruciform Terraces date to the 13th century (see Jacques 1994, 1999) ,which suggests that the transition between stone and wooden architecture was already well underway by the end of the 13th century.

While no wooden remains were excavated during the 2019 season, several sites feature the remains of post-holes, which permits a reconstruction of how the original roof was positioned or supported. For example, Nara archaeologists identified semicircular incisions/post-molds carved into the inner retaining wall of Western Prasat Top's Buddhist Terrace (ATV010) (Nara 2012: 119). Their study suggests that the superstructure was entirely built within the boundaries of the masonry. Another instance was discovered during clearance work at ATV036, where our team cleared two laterite blocks with different-sized post-holes (D=8cm and D=14cm) (Figure 10). The dimensions corresponded with remains of the inner and outer retaiing walls and suggest that the roof and walls were stabilized by a set of internal and external pillars.

This theory was verified through our excavation of ATV012-*3000*, a 2x1m test-pit directly north of the structure's northern retaining wall, within which we unearthed a possible post-mold or anchor (Figure 11). Located 70cm from the wall, this feature consisted of a 0.55x0.34m pile of hard-packed soil and sandstone chips and was marked by a pile of stoneware roof-tiles on the surface. The pile surrounded a semicircular hole, 8cm wide, which continued 16cm through the debris towards a small, circular divot. A square iron nail was found at the base of divot (corresponding to ATV012-*3004*) which may have served to fasten the post into the earth or even fell with the roof. An identical nail was also identified in test-pit locus ATTS009-*2002*, indicating that these nails served a variety of functions across Angkor Thom. Two small bronze ingots were also found below the nail, suggesting a votive deposit. Based on these results, it is likely that future excavation work will unearth additional foundations that will shed light on the typical size and dimensions of *praḥ vihār* wooden superstructures.

Last, one of the most abundant superstructural remains found surrounding Buddhist

Terraces are roof-tiles, which are explicitly noted in Zhou Daguan's account of monasteries within Angkor Thom (P.Harris 2007: 53) (Figure 12). The majority of the tiles identified at surface-level were stoneware, while our excavations in 2019 uncovered additional earthenware examples.

Roof-tiles were identified across 42 of 72 (58.3%) Buddhist Terraces during survey, and our excavation of Test-Pit ATV018-1000 unearthed several earthenware roof-tiles in lower loci. This suggests that roof-tiles may not always exist at surface-level, and the map below likely underrepresents the actual number of Buddhist Terraces with tiled roofs. It is currently unclear whether this tradition of tiled roofs continued at the later capitals of Longvek, Oudong, or Srei Santhor.

Figure 10 (Top-left): Post-hole laterite block (D=8cm), ATV036

Figure 11 (Top-right): Possible pillar anchor/post-mold, ATV012-3004

Figure 12 (bottom-left): Stoneware roof-tile sherds excavated from ATV012-1005

Funerary Stupas and Reliquaries

Apart from the physical prayer-halls, Buddhist Terraces are either surrounded by or aligned with funerary-reliquary monuments (either *stupa* or *chedi*), which stress the multifunctional and community agency of these structures. Marchal notes the complete absence of stupas from early Angkorian inscriptions (1951: 552), and also observes that these constructions do not

appear to take on the same monumental form that is found in Burma, India, or Sri Lanka. They are, he notes, "a sort of reliquary". Two primary types of stupas, smaller "funerary stupas" and larger *chedi*, are found at Angkor. These terms are derived from the writings of Marchal (1951: 584-586) and Thompson (1996: 278-284) and are based on each structure's size and placement in relation to the central *praḥ vihār*.

"Funerary stupas" (Figure 13) were likely single-use monuments which interred the remains of a significant member of the royal family, elite patron, or a favored monk/abbot, and are typically placed arbitrarily in the vicinity of the *praḥ vihār*. However, reliquaries deserve further attention. These larger monuments are defined by their substantial size as well as their placement at the western extremity of any *praḥ vihār*. Thompson suggests that this placement is unique to Angkorian Theravāda (Figure 14).

> *"Centuries of architectural design in the religious tradition dictated that the structures should be aligned along their axes…the analogous position of the ancient sanctuary* [praḥ vihār] *on the one hand, and the stupa or treasury on the other seems...of particular note…What role did the old sanctuary, or the stupa (treasury), play in the early Theravāda complex? If the principal Buddha image was placed in the platform construction, what, if anything, was kept in the edifice [directly] behind?*
>
> *The [chedi] first appears in Cambodia around the thirteenth century at Angkor, just as prasat construction ceases. Comparison of the two types of configuration described by Marchal indicates that the Buddhist stupa arose, literally, in the place of the ancient prasat*." (1996: 279-280)

Expanding this idea, I argue that reliquaries at Angkor (or at least their substructures) fit into two distinct architectural categories (Figure 15). The first structure, called a *praḥ ṭhat*, was built on top of a tiered basement containing relics and "treasures" (Marchal 1918: 11). Marchal notes that these contained a "sort of *prasat* on a square platform containing an interior cell… meant to shelter all the debris of…statues and other cult objects…whose sacred character kept them from being thrown out." (1918: 10-11; Thompson 1996: 281). A lintel depicting Krishna was found at site ATV036 in 1922, which along with several crenellations we identified in 2019 resembling those placed atop Angkor Wat's soaring towers indicate that the superstructure indeed originally resembled a prasat. Marchal suggests that these structures were in fact quite ancient, and possibly predated the construction of *praḥ vihār*. As staircases scale the basement, these *praḥ ṭhat* were accessible, and are often directly connected to their corresponding *praḥ vihār* architecture.

The second reliquary type, a *chedi*, would have resemble a larger version of a funerary stupa, although none have been fully preserved at Angkor. Rising from a square base, the

superstructures would have resembled contemporary examples from Sri Lanka or the Thai kingdom of Sukhothai and Ayutthaya (Aasen 1998; De Vos 2003; Polkinghorne et al. 2013: 591).

Thompson's suggestion that *praḥ ṭhat* or *chedi* essentially "substituted" for the temple as a monument with funerary implications is reflected by the various stone sarcophagi found in the proximity of many *chedi* at Angkor Thom. And unlike the "funerary stupas" mentioned above, *chedi* appear to have been established for communal funerary rites. Interestingly, the majority of these structures are not surrounded by *sīmā*, suggesting a separate-but-equal significance of

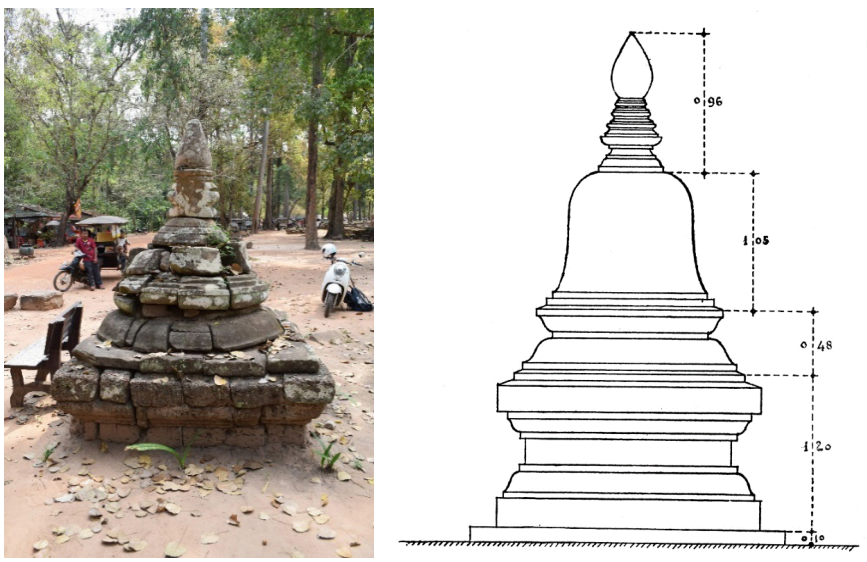

Figure 13 Side-by-side comparison of illustration by Henri Marchal (1951: 584) and photograph of Funerary Stūpa, Tep Pranam (ATV008)

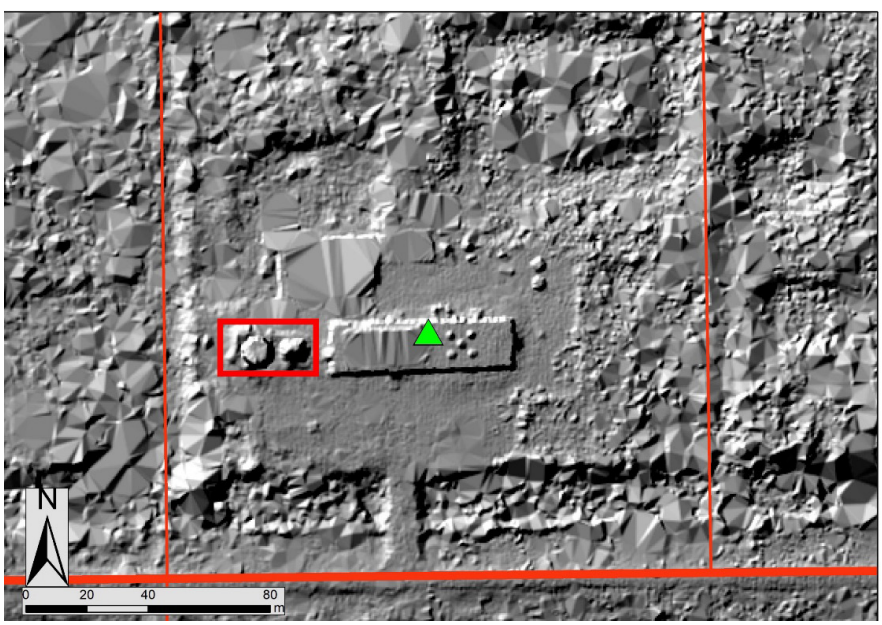

Figure 14 LiDAR image of Prasat Prambuon Loveang/Wat Tang Tok (ATV006) praḥ vihār and chedi alignment. Imagery source: KALC

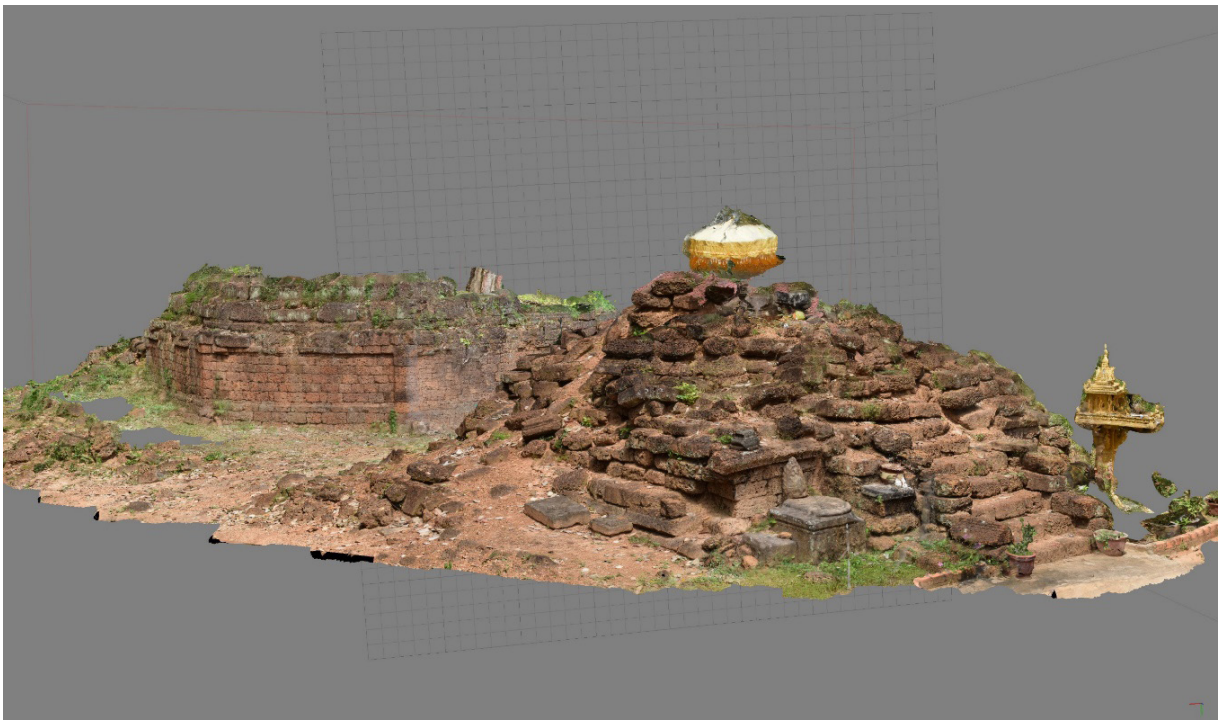

Figure 15 praḥ ṭhat (right) and chedi (left), Prasat Prambuon Loveang/Wat Tang Tok (ATV006)

Theravāda Buddhist and ancestral worship in the same ritual places. This exclusion does not extend to funerary stupas, for example those surrounding Tep Pranam within the Royal Palace (see below).

Renovations and Expansions

Religious structures at Angkor were continuously renovated and augmented throughout their histories as active sites of worship to suit the needs of their patrons and parishioners. However, apart from the 16th century restoration of Angkor Wat, these augmentations are rarely described in extant texts. Studies exploring the evolution of Jayavarman VII-era temples by Cunin (2004, 2007) and Clark (2007) suggest that larger political or religious processes occurring at Angkor underwrote various augmentations. *Praḥ vihār* are no exception, and thus should not be viewed as static monuments reflecting single periods of occupation if evidence dictates otherwise.

A vertical juncture or "break" in the architecture of the retaining wall provides one of the most visible examples a *praḥ vihār* expansion (Figure 16). These breaks contrast with the methodical placement of overlapping blocks and suggest an expansion or reconstruction of the original building. At Tep Pranam, for example, the enlargement of the original cruciform structure is not only marked by vertical junctures on either retaining wall but also by a raised row of laterite blocks which marked the original staircase of the earlier structure. This

renovation indicates that the staircase was intentionally covered by the new architecture (rather than dismantled) and may still exist beneath the floor. Another example of a juncture is one marked by a change in building materials; for example, ATTS008 (Terrace des Hamsas) in the northwest of the Royal Palace was originally constructed as a sandstone pedestal with friezes,

Figure 16: Juncture identified between Tep Pranam terrace and porch.

Figure 17: Juncture between sandstone and laterite building phases blocking bas-relief, ATTS008 (Terrace des Hamsas), Royal Palace

but its hypothesized Theravāda Buddhist augmentations (a pedestal and a southern extension) are entirely constructed from laterite (Figure 17).

Construction in fired brick is hypothesized to constitute the latest phase of site renovations. Brick, which had been gradually phased out of Angkorian architecture by the 11th century, was potentially reintroduced during the mid-late 14th century and features abundantly in reliquary architecture during the post-Angkorian Period (Dumarçay and Royère 2001: 13; Gosling 1991: 70). One of the largest brick renovations occurred at Monument 71/ATTS009, which was cleared and excavated during the 2019 AVP field season (Figure 18). The expansion of this site from a small 14.5x11m *praḥ vihār* constructed in laterite is primarily defined by the erection of a larger western mound with an expansive brick retaining wall on the north side (Figure 19-20). Further expansions in brick include the construction of two funerary *stūpa*s at the northeast and southeast corners of the original complex, the paving of the floor, and the erection of several segments of a brick boundary wall parallel to the outer edge of the *praḥ vihār* connecting the retaining wall to the *stupa*.

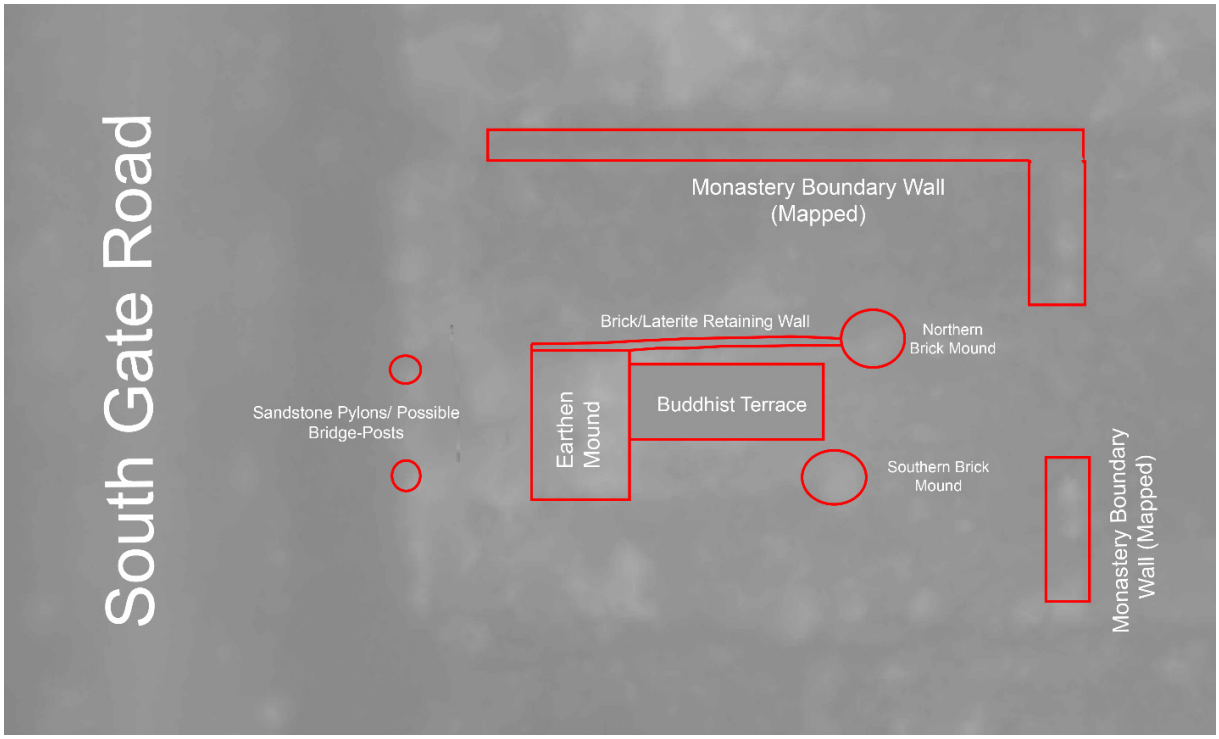

Figure 18: ATTS009 (Monument 71) Floorplan with brick installations labelled. Imagery source: KALC

Figure 19: Digital rendering of ATTS009 brick retaining wall and test-pit 1000 (54cm)

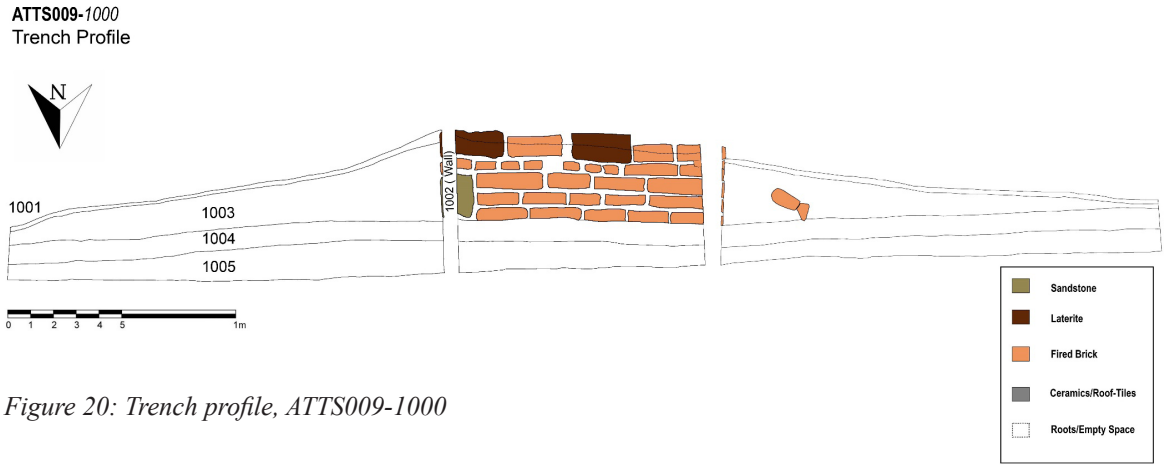

Figure 20: Trench profile, ATTS009-1000

However, aside from the two eastern *stūpa*s, the brick renovations at ATTS009 appear incomplete. For example, there is no structural evidence for the existence of a superstructure atop the western mound, no evidence of a retaining wall was identified on the southern edge of the mound, and a symmetrical brick boundary wall was not constructed between the *stūpa* and the mound on the south side of the site. Furthermore, we did not identify brick debris identified on the southern edge of the site during survey, and no bricks recycled into later monuments in a similar manner to sandstone or laterite.

The elevated "southern lateral aisle" is described by Marchal as one of the more notable renovations to many *praḥ vihār* (Figure 23). Marchal hypothesized that this represented

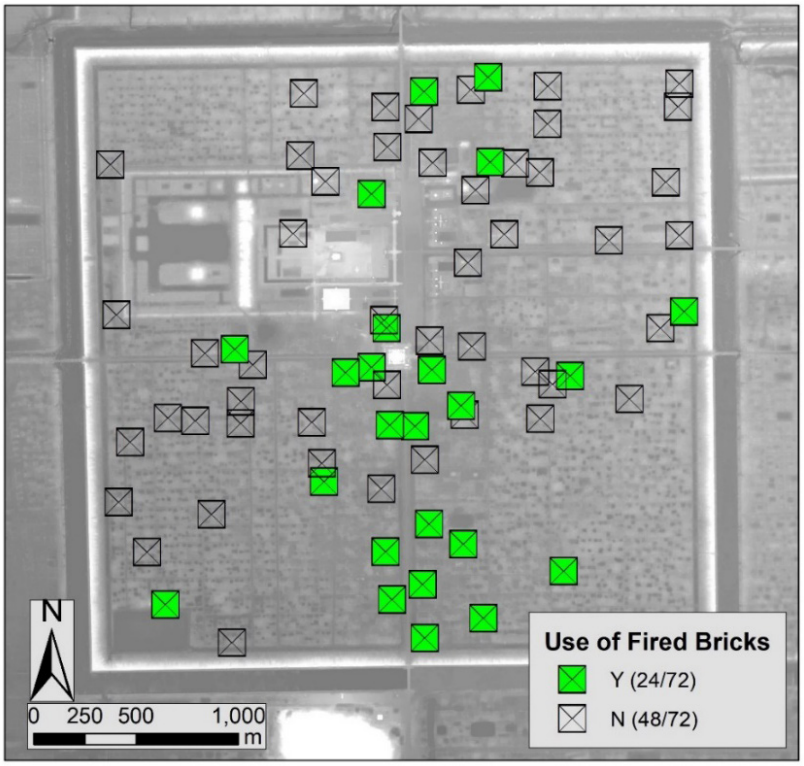

Figure 21 LiDAR map of structures with fired brick remains. Imagery source: KALC

Figure 22 Central Sanctuary Pedestal with brick wall, ATV033

a pathway "reserved for the monks" accessed directly from the floor (1918: 10); a similar construction features in modern Cambodian Buddhist architecture. This aisle was erected above the floor of a Buddhist Terrace's uppermost tier and is retained by the existing outer wall alongside an inner wall of vertically-stacked sandstone blocks. This feature spans either a portion or the entire southern edge of the terrace or as far as the Central Sanctuary pedestal (see below). Twenty-four structures feature these aisles, although only three appear to be original constructions rather than renovations.

In order to investigate this feature during our excavations of ATV012, we expanded trench ATV012-*1000* (2.1x2m) 10cm south to encapsulate the aisle (Figure 24). Locus ATV012-*1004* revealed that this sandstone aisle did not appear to interlock with the terrace's original laterite substructure, providing yet another example of an incongruous structural interface indicative of later renovations. More importantly, the vertically-stacked blocks which constituted the inner retaining wall of the aisle were mismatched and evidently recycled from earlier sites.

If the retaining wall excavated in ATV012-*1000* is reflective of the structural composition of other aisles across Angkor, for example ATV018 illustrated above, the widespread construction of southern lateral aisles in mismatched recycled blocks (vertically-placed or otherwise) potentially illustrates a sudden popularity or urgency to install these features within Angkorian monasteries (Figure 25).

Figure 23 Digital rendering of raised southern lateral aisle, ATV018

Figure 24: Mismatched recycled sandstone blocks, southern lateral aisle, ATV012-1014

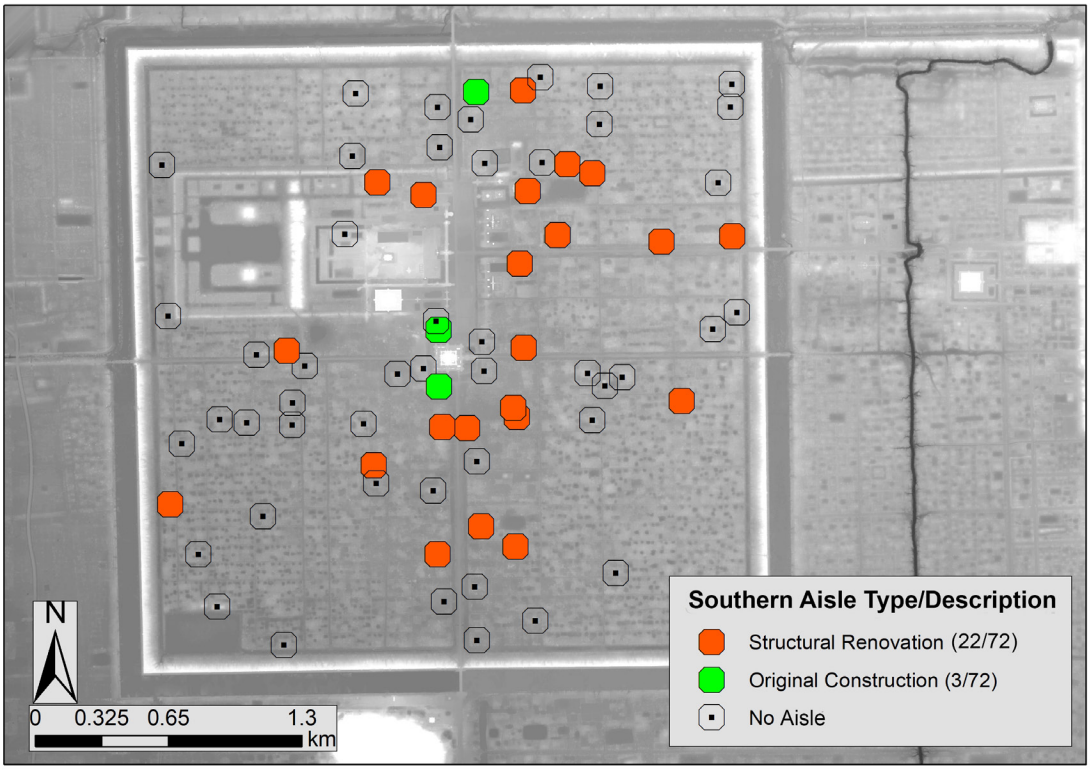

Figure 25: LiDAR Map of Buddhist Terraces with southern lateral aisles within Angkor Thom. Imagery source: KALC

Discussion

These initial seasons of site research have already revealed an enormous amount about the initial transmission of Theravāda Buddhism at Angkor its co-option as a state religion, and the gradual evolution of praḥ vihār space between the 13th-16th centuries. For example, one of the major misconceptions from previous scholarship is that Theravāda Buddhism somehow destabilized the political order of Angkor's politico-religious rulership, relegating mythologized institutions such as the *devarāja* in favor of an "immaterial" or "decentralized religious framework (Briggs 1951: 260; Spiro 1971: 6-9 see I.Harris 2004). While I have previously emphasized that epigraphic evidence for example K754/1309 CE ties foundation and dedication activities to acts of royal patronage, I argue that the archaeological and spatial data clearly illustrates that the spread of Theravāda Buddhism was centrally regulated despite the abundant local variation.

Although shaped by local factors such as congregation sizes and the stratification of populations, the "Buddhist Terrace" architectural form represents a similar standardization of architecture to earlier prasat. De Bernon, for example, posits that praḥ vihār, like temples, may have possessed a force of villagers, laborers, or even slaves tied to the monastery (2003: 211; see P. Harris 2007: 58-59). Praḥ vihār may have additionally served as sanctuaries "for the poor, [as] hospices for the elderly, homes for the lost children, as places for all important festivals in village life, or places for conciliatory meetings" (2003: 217; see Pou 2012: 237-238). Thus, praḥ vihār were similar societal lynchpins to local prasat.

It is therefore also probable that the dissemination of Theravāda Buddhist monasticism across Angkor was a centralized initiative, and construction patterns within Angkor Thom reflected longstanding notions of politico-religious space embedded within the citadel's urban landscape. For example, a correlation between size and centrality of praḥ vihār was mapped during survey (Figure 26 and 27) and illustrates that more prominent praḥ vihār were constructed in and within proximity to the capital's ceremonial core. As it is currently unknown when sīmā were introduced, it remains unclear whether centralized praḥ vihār were the first to host ordinations or whether this feature was one of the unique standardizations of Theravāda space found at Angkor (alongside the praḥ thāt) from the beginning. Our research also shows that uniform renovation trends reflect centralized religious construction, for example the utilization of fired bricks and southern lateral aisles in similar building styles. The unique "stacking" of southern lateral aisles, for example, was widespread.

Furthermore, Tep Pranam, a prominent Buddhist Terrace found directly north of Angkor Thom's inner Royal Palace complex, forms the religious foc an enormous royal monastery (see Groslier 1969, 1973). This structure visibly underwent at least two renovation phases from its initial construction as a cruciform base (see Figure 16 above). Apart from the physical terrace, twenty-seven identical funerary stupas, a raised laterite causeway, and other infrastructure

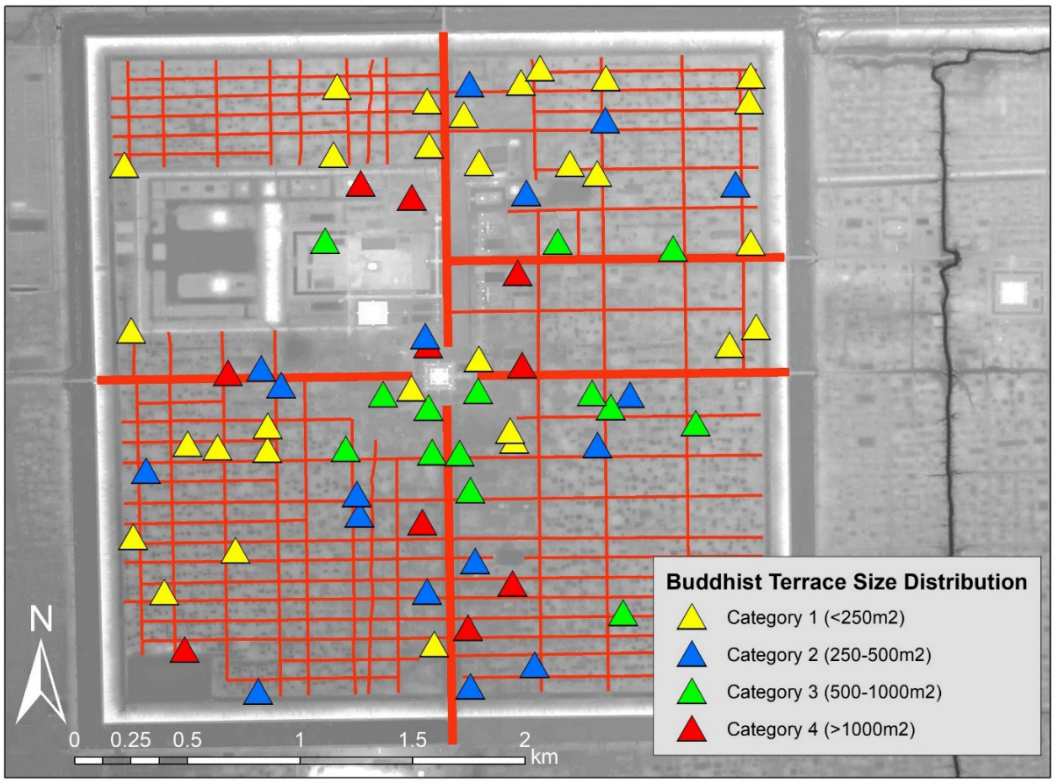

Figure 26: LiDAR Map of Buddhist Terrace distribution by size. Imagery source: KALC

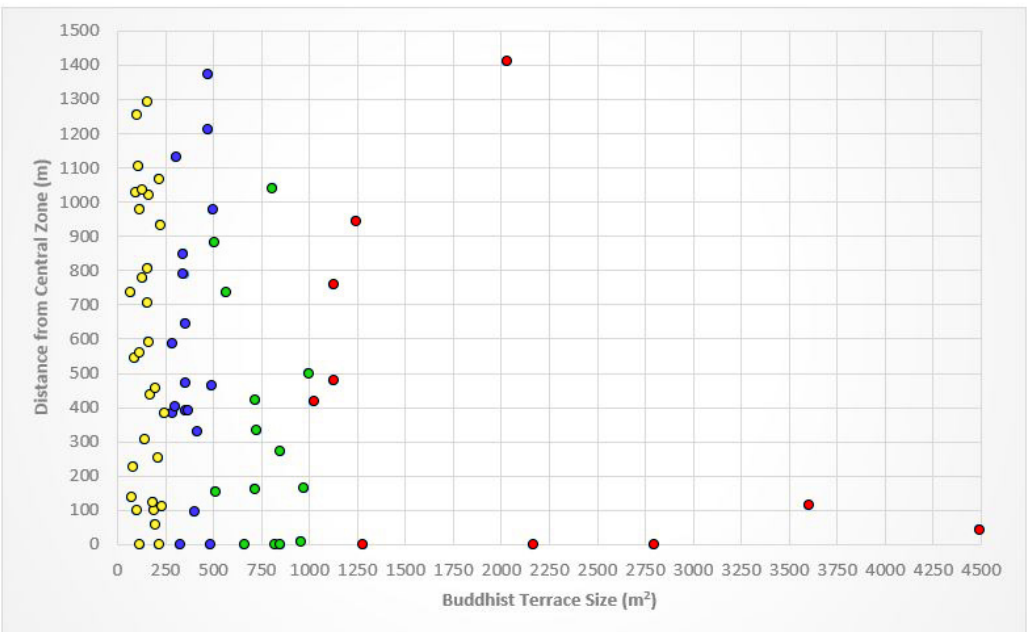

Figure 27: Graph of Buddhist Terrace size in relation to distance from Central Zone. Colours represent size categories found in Fig. 7.0

including a possible sālā ("Edicule B") were constructed to focalize the sanctuary (Castillo et. al 2018: 3). Although further research and excavation is necessary to date these construction phases, the maintenance and expansion of a central royal complex is a key component of earlier royal rhythms of construction and suggests continuities between earlier traditions and royal patronage of Theravāda Buddhism (Stern 1951). Finally, Coedès identification of the Saugatāśrama stele (K.290/9th century) in 1908 for a long time dated this complex to the 9th century, but the actual Saugatāśrama, or Prasat Ong Mong, is located to the southeast of Pre Rup temple (Chea 2018; Chea et al. in press; Coedès 1908, 1932, Pottier 2003), and was commissioned by Yaśovarman I (r. 889-910 CE) as part of a campaign of āśrama construction across the empire. I argue that this move was purposeful rather than simply a coincidental votive deposit, and must have been a product of a direct signification of Tep Pranam based on the power of past Angkorian kings; Terrace M (ATV032), for example, was the final resting place of K.491/9th century, which marked one of the four corners of Yaśovarman's East Baray and certainly did not designate this structure as any sort of new ritual boundary (Marchal 1918: 31). These facts suggest that the standardized praḥ vihār form was meant to, in many ways, replicate a centralized form of architecture in a symbolic diffusion of politico-religious authority (Hall 1992; Wolters 1982).

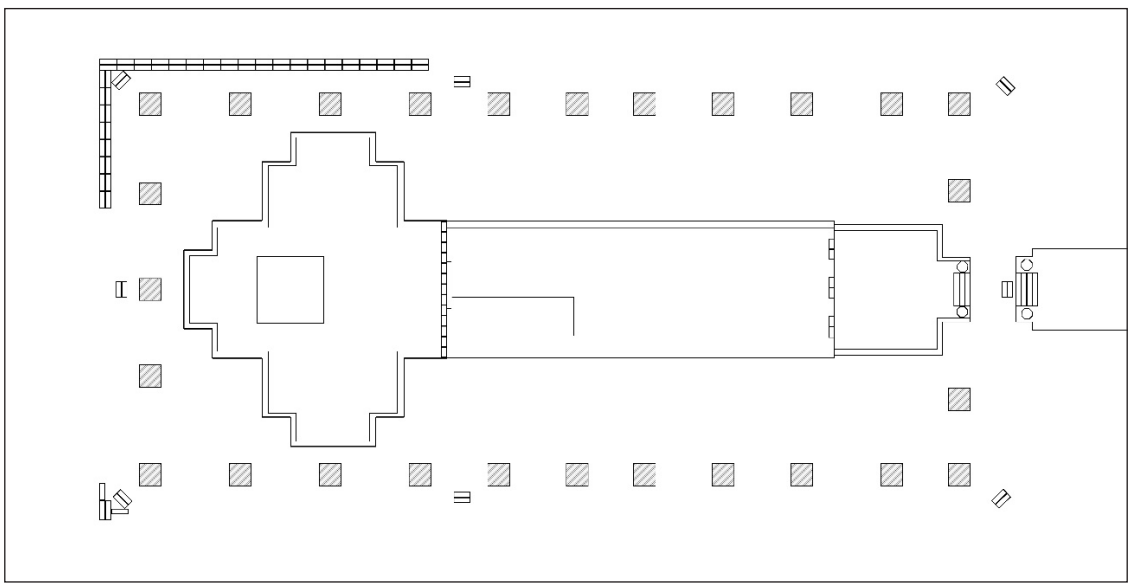

Figure 28 Scaled site plan of Tep Pranam Buddhist Terrace illustrating above-ground structural elements.

Spatial alignments of *praḥ vihār* identified within the capital also appear to reflect centralized planning (A.Harris 2019). One notable alignment was mapped in 2017 along the major longitudinal arterial thoroughfare of the capital, only interrupted by the citadel's ancient ceremonial core and the Bayon. This alignment comprises a staggered (or zig-zagging) arrangement of thirteen *praḥ vihār* on either side of the road (Figure 29) (A.Harris 2019: 26-27). Interestingly, each

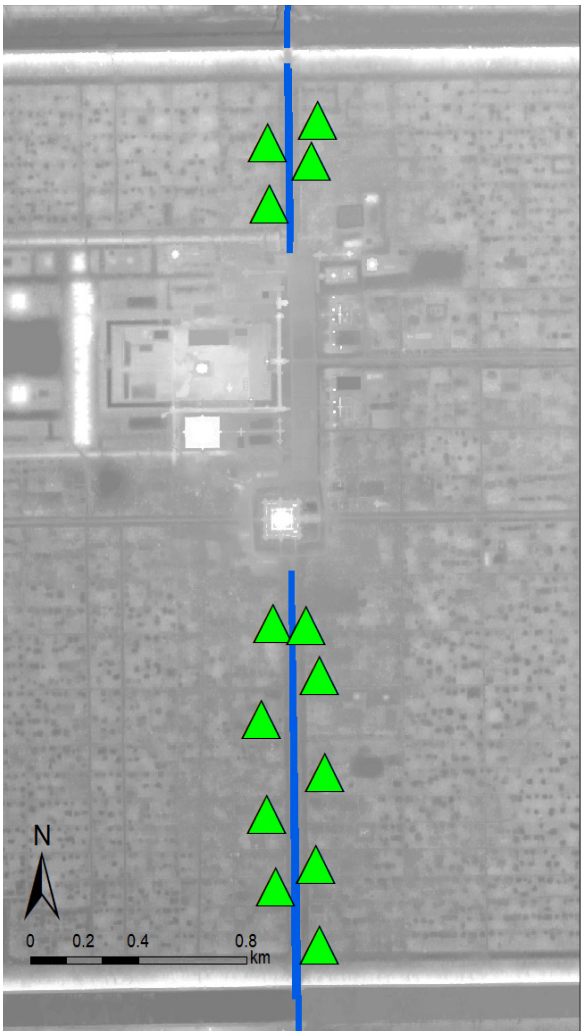

Figure 29 Longitudinal Alignment of Prah Vihar along North and South Gate Roads

structure along this route varies in both size and architecture, which indicates gradual rather than uniform development. The identification of fired brick renovations at nearly every structure along the southern portion suggests that this alignment may have been one of the final areas of continuous occupation within Angkor Thom and may reflect the continued use of the Bayon as a religious sanctuary during the post-Angkorian Period.

Lastly, use of recycled stone Lastly, use of recycled stone may reflect the inability to easily access quarried sandstone during period(s) of dense Buddhist Terrace construction. This suggests that the canals used to transport sandstone from the quarries along Phnom Kulen may have functioned in a limited capacity compared to prior centuries (Buckley et al. 2010; Uchida and Shimoda 2013). The vertical "stacking" of the southern lateral aisle in mismatched blocks may be evidence of this reality during the late or post-Angkorian Period. It is also possible that the density of *praḥ vihār* construction within Angkor Thom correlates with the mid 13th -mid 15th breakdown of the low-density agrarian landscape thought to define Angkorian urbanism, and populations concentrated their use of durable resources on constructions within the capital. Although many of the small ponds/*trapaeng* supplementing households within Angkor Thom likely date to the reign of Jayavarman VII, the re-excavation of several larger *srah* and moats across Angkor between the 13th-18th centuries suggest that many were dug out of necessity caused by the collapse of Angkor's hydrology during the 14th century due to patterns of unstable climactic fluctuation (see Fletcher 2009; Fletcher et al. 2017; Penny et al. 2008).

Figure 30: Chedi spire with modern offering, ATV058, Southwest Quadrant, Angkor Thom

However, 16th century European chronicles recount a functional system of canals flowing through undisclosed locations within Angkor, so further research is necessary to understand the layout of functional post-Angkorian hydrology (Groslier 1958: 52-55; Marcus 1968: 329). In turn, additional excavations into occupation mounds surrounding *praḥ vihār* would no doubt aid in the ability to determine occupation phases far more than Buddhist Terrace structural renovations (see Carter et al. 2018, 2019; Stark et al. 2015).

Conclusion

Although the future publication of radiometric dates associated with each of the four excavations sites will no doubt contextualize the construction of *praḥ vihār* in relation to known Angkorian historical developments the results presented above from the first season of AVP research establish that Buddhist Terrace construction was a multifaceted process which was concurrently centralized and localized. Furthermore, these results set the groundwork for a series of fascinating future campaigns exploring diverse structural forms of *praḥ vihār,* as well as the spread and dissemination of religious construction across the capital. The iconographical and structural conversion of several temples, for example Preah Palilay and Preah Pithu, also deserve further investigation. Last, assuming Zhou Daguan's account of Angkorian religious structures was somewhat accurate and *praḥ vihār* were indeed focal points of religious practice by the late 13th century, the standardization of architecture and re-envisioning of urban space through multiple episodes of construction and renovation verify important continuities between the ritual-spatial traditions of the Angkorian civilization and modern Cambodia. Apart from the continued seriation and chronology of Theravāda Buddhism at Angkor, I propose that future should also focus on the use of these sites as foci of social memory and sacrality in perpetuity from the 13th century onwards. In several instances, our survey work revealed that many ruins are still venerated by modern populations as sites of ancestral and spiritual worship no different than ancient (Figure 30); thus, each should be treated with the utmost respect as sanctuaries where past and present memory continuously collide.

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ជា សារិទ្ធ
អាជ្ញាធរជាតិអប្សរា

ប្រាសាទដែលសព្វថ្ងៃហៅថា «ទន្លេស្ងួត» នេះជាមន្ទីរពេទ្យមួយក្នុងចំណោមមន្ទីរពេទ្យទាំង១០២ ដែលកសាងឡើងក្រោមព្រះតម្រិះនៃព្រះបាទជ័យវរ្ម័នទី៧។ តាមពិតទៅ យើងពុំអាចឃើញរចនាសម្ព័ន្ធ ពេញលេញនៃមន្ទីរពេទ្យណាមួយឡើយ ដោយសារអគារសម្រាប់អ្នកជម្ងឺ, អគារបុគ្គលិក, អគារព្យាបាល ។ល។ សុទ្ធសឹងតែធ្វើឡើងពីវត្ថុធាតុដែលមិនអាចគង់វង្សបានយូរ ដូចជាឈើ និងឫស្សីជាដើម។ សំណង់ដែលនៅសល់អាចមើលឃើញ ទោះបីជាដួលរលំបែកបាក់ខូចខាតខ្លះក៏ដោយ ជាអគារថ្ម ដ្បិតគេសាងឡើងសម្រាប់តម្កល់ប្រតិមាទេពនានានៅក្នុងព្រះពុទ្ធសាសនាមហាយាន ជាពិសេសទេពដែលមានឈ្មោះថា «កែសជ្យគុរុ» ប្រែថា «គ្រូថ្នាំ»។ ទេពអង្គនេះតែងមានព្រះអាទិត្យ និងព្រះចន្ទ្រអមសងខាង។ អាស្រ័យហេតុនេះ ក្រោមពាក្យថា «មន្ទីរពេទ្យ» យើងសំដៅទៅតែហោបន់ស្រន់ប៉ុណ្ណោះ។*

នៅជុំវិញក្រុងអង្គរធំមានមន្ទីរពេទ្យចំនួន៤ ៖ ប្រាសាទទន្លេស្ងួតនៅខាងជើង, ប្រាសាទលាក់នាងនៅខាងកើត, ប្រាសាទព្រហ្មកិលនៅខាងត្បូង, ប្រាសាទទ្រមូងនៅខាងលិច (រូបលេខ១)។

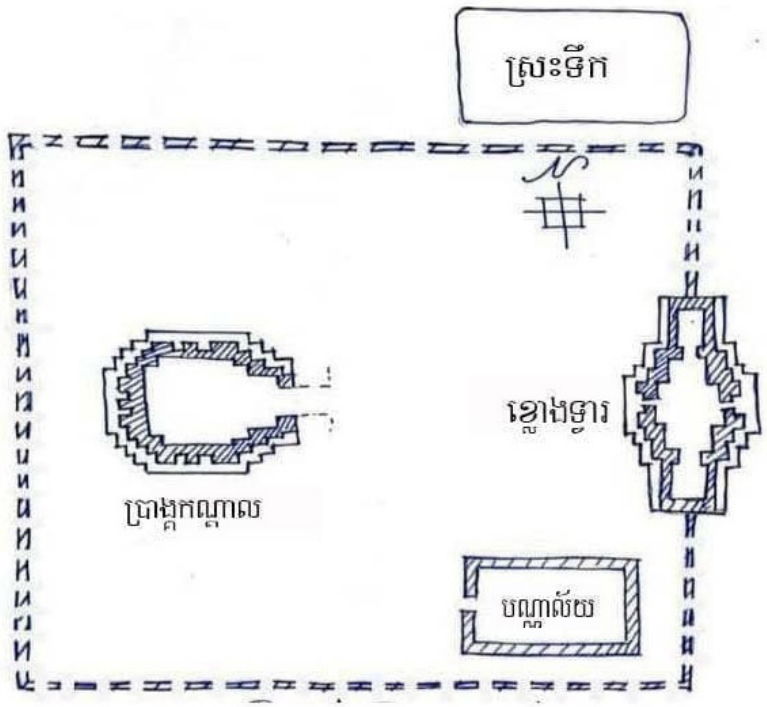
ទន្លេស្ងួតស្ថិតនៅភូមិនគរក្រៅនៅចម្ងាយប្រមាណ៣០០ម. ខាងជើងកំពែងអង្គរធំ។ ប្រាសាទនេះធ្វើអំពីថ្មកក់លាយថ្មបាយក្រៀម បែរមុខទៅទិសខាងកើត ហើយសង់នៅលើទីទួលជាប់នឹងអាងទឹកសិប្បនិមិត្តមួយនៅខាងកើតនោះ ហៅថាទន្លេស្ងួតដូច្នេះឯង (រូបលេខ២)។

១. ការងារដែលមានកន្លងមក

- នៅឆ្នាំ១៩៣០ និង១៩៥៤ អ្នកអភិរក្សនៃ «សាលាបារាំងចុងបូព៌ា» បានកាប់ឆ្ការព្រៃធ្វើកំណាយ

* *ក្នុងករណីប្រាសាទទន្លេស្ងួតនេះ យើងឃើញស្វាគស្នាមនៅទម្រុបល្ង៉ឹងជាប់នឹងកម្រាលថ្មក្នុងប្រាសាទកណ្តាល។*

រូបលេខ១ ប្លង់ទីតាំងប្រាសាទទន្ទេសួត



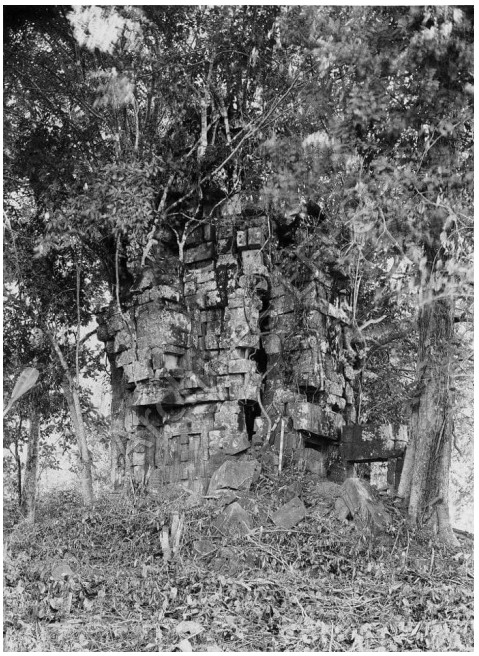
រូបលេខ២ ប្លង់ប្រាសាទទន្ទេសួត

សម្អាតដីដុំវិញខឿនប្រាសាទនិងប្រមូលថ្មដែលធ្លាក់រាយប៉ាយក្នុងបរិវេណប្រាសាទទុកមួយអន្ទឹងាជ្រុងឦសានៃប្រាង្គកណ្តាល។ ខាងក្រោមនេះជារូបថតខ្លះៗថតនៅពេលនោះ (រូបលេខ៣ដល់៩)។

រូបលេខ៣ ប្រាង្គកណ្តាលជ្រុងខាងជើង
(EFEO ១៩៣០)

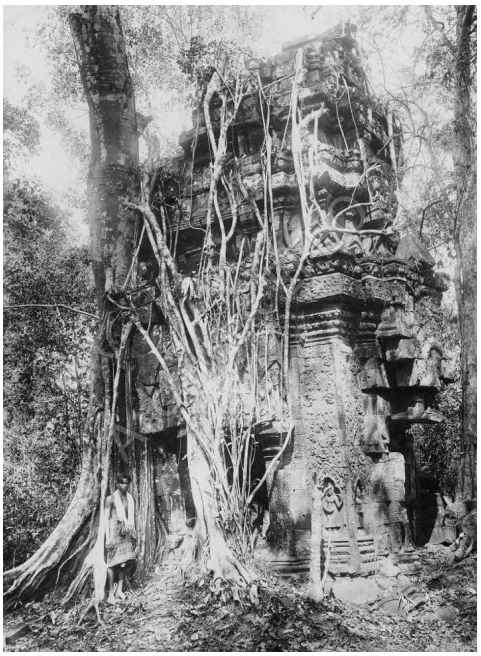
រូបលេខ៤ ប្រាង្គកណ្តាលជ្រុងឦសាន
(EFEO ១៩៣០)

រូបលេខ៥ ប្រាង្គកណ្តាលជ្រុងពាយព្យ
(EFEO ១៩៥៤)



រូបលេខ៦ ប្រាង្គកណ្តាលជ្រុងអាគ្នេយ៍
(EFEO ១៩៣០)

រូបលេខ៧ ប្រាង្គកណ្តាលជ្រុងខាងត្បូង
(EFEO ១៩៥៤)



រូបលេខ៨ ប្រាង្គកណ្តាលជ្រុងនិរតី
(EFEO)

រូបលេខ៩ ជ្រុងអាគ្នេយ៍ ពេលសម្អាតកំណកដីក្បែរខឿនប្រាសាទ
(EFEO ១៩៥៤)

- នៅឆ្នាំ២០១២ អាជ្ញាធរជាតិអប្សរាបានចាប់ផ្តើមសិក្សា និងសង់ទ្រនល់ឈើការពារផ្នែកដែលប្រឈមនឹងការដួលរលំ។

- នៅឆ្នាំ២០១៧ ក្នុងកិច្ចសហការណ៍ជាមួយ Nalanda Sriwijaya Center នៃប្រទេសសិង្ហបុរី អាជ្ញាធរជាតិអប្សរា បានធ្វើកំណាយស្រាវជ្រាវនៅបរិវេណខាងកើតប្រាសាទ។ គេរកឃើញប្រតិមាថ្មកក់រូបព្រះពុទ្ធរូប, ទ្វារបាល និងសំណល់វត្ថុប្រើប្រាស់ប្រចាំថ្ងៃមួយចំនួន។ មកទល់ពេលនោះ ប្រាសាទខូចខាតខ្លាំងហើយកំពុងប្រឈមនឹងការដួលរលំ។ នៅផ្នែកដំបូលព្រមទាំងជញ្ជាំងជ្រុងអាគ្នេយ៍និងជ្រុងពាយព្យ ថ្មបាក់ធ្លាក់មកក្រោមស្ទើរទាំងអស់។ គ្រឹះប្រាសាទស្រុតខ្លាំង ឯជញ្ជាំងជ្រុងខាងលិចវិញទ្រេតខ្លាំងដល់ទៅ១៥° (រូបលេខ១០-១១)។

រូបលេខ១០ ប្រាង្គកណ្តាលជ្រុងអាគ្នេយ៍ ២០១៥

រូបលេខ១១ ប្រាង្គកណ្តាលជ្រុងពាយព្យ ២០១៥

- នៅឆ្នាំ២០១៤ អាជ្ញាធរជាតិអប្សរាបានបញ្ជូនអ្នកបច្ចេកទេសនៃនាយកដ្ឋានអភិរក្សប្រាសាទក្នុងឧទ្យានអង្គរ និងបុពណវិទ្យាបង្ការធ្វើការសិក្សាវាយតម្លៃផ្នែកស្ថាបត្យកម្ម ស្ថានភាពប្រឈមនឹងគ្រោះថ្នាក់ហើយធ្វើរិភាគ ដើម្បីរៀបចំគម្រោងជួសជុល។ និយាយជាសង្ខេបមក យើងត្រូវរៀបចំរុះរើហើយរៀបផ្គុំឡើងវិញតាមគោលការហៅថា Anastylosis។

២. ស្ថានភាពបច្ចុប្បន្ន

គ្រឹះ៖ គ្រឹះប្រាសាទនេះសង់អំពីថ្មបាយក្រៀមនិងដីខ្សាច់ម៉ដ្ឋបុកបង្ហាប់លាយជាមួយកំទេចថ្មភ្នំ។ គ្រឹះពុកផុយ និងស្រុតខូចខាតខ្លាំង ដោយសារឫសឈើចាក់រំលើងថ្ម ហើយទឹកភ្លៀងក៏ហូរច្រោះ។ មិនតែប៉ុណ្ណោះមានកណ្តៀរនាំដីចេញពីស្រទាប់គ្រឹះផង។ នៅជ្រុងខាងលិច គ្រឹះស្រុតខ្លាំងចុះក្រោមប្រមាណជា

៣០ ដល់៤០ស.ម.)។ ជ្រុងខាងជើងក៏ទ្រុឌទ្រោមច្រើនដែរ។

ខឿន ៖ ខឿនប្រាសាទដែលសាងពីថ្មកក់លាយថ្មបាយក្រៀមនេះបែកបាក់ពុកផុយខ្លាំង។ ថ្មខ្លះរំកិលចេញពីទីតាំងដើម និងខ្លះទៀតរបេះធ្លាក់មកដីដោយសារឫសឈើ និងរងទម្ងន់ខ្លាំង។

ជញ្ជាំង ៖ ជញ្ជាំងប្រាសាទសង់ពីថ្មកក់មានស្ថានភាពធ្ងន់ធ្ងរដូចគ្នា, ថ្មភាគច្រើនឃ្លាតចេញពីទីតាំងដើម មានស្នាមប្រេះដាច់ចេញពីគ្នា (គម្លាតចាប់ពី១៥ ដល់ ៤០ស.ម.), ជញ្ជាំងទ្រេតខ្លាំងងាកទៅលិច និងទៅជើង (លើសពី១៥°), ថ្មជញ្ជាំងមួយភាគធំនៅជ្រុងអាគ្នេយ៍រលុះធ្លាក់រហូតដល់ថ្នរួតទី១៤, ថ្មជញ្ជាំងនៅជ្រុងពាយព្យរលុះធ្លាក់រហូតដល់រួតទី២០, ជញ្ជាំងជ្រុងនិរតីមានដើមត្រាំដុះពីលើ, ឫសឈើចាក់ចូលតាមចន្លោះថ្មជញ្ជាំងខាងលិចចូលរហូតដល់ថ្មកម្រាលបាតប្រាសាទផ្នែកខាងក្នុងនិងជញ្ជាំងខាងកើត។

ដំបូល ៖ ដំបូលប្រាសាទសង់ពីថ្មកក់ក៏រងការខូចខាតខ្លាំង, ថ្មរចនាសម័ន្ធដំបូលមួយភាគធំរលុះធ្លាក់ចូលក្នុងប្រាសាទនិងបរិវេណជុំវិញ, មណ្ឌបសង់ពីថ្មកក់តភ្ជាប់ពីទ្វារចូលខាងកើតទៅនឹងតួប្រាសាទឃើញនៅសល់តែស៊ុមបង្ហួចផ្នែកខាងជើងប៉ុណ្ណោះ ឯជញ្ជាំងខាងត្បូង និងដំបូលបាក់ធ្លាក់ដល់ដីទាំងអស់។

- ស៊ុមទ្វារ ៖ សសរពេជ្រ និងសសរផ្តោបនៅមុខខាងកើតរលំបាក់ និងបាត់បង់ទាំងអស់។ ទ្វារបញ្ឆោតមុខខាងត្បូងរងការខូចខាតធ្ងន់ធ្ងរ។ ផ្តែរ, សសរពេជ្រ និងសសរផ្តោបរលុះធ្លាក់ដល់ដី។

៣. ការជួសជុល

មុននឹងចាប់ផ្តើមការងារក្នុងដំណាក់កាលនីមួយៗ យើងតែងតែបង្ហាញគម្រោងសូមយោបល់ពីអ្នកបច្ចេកទេសអង្គការយូណេស្កូ។ អ្នកអនុវត្តទាំងអម្បាលម៉ានសុទ្ធសឹងជាអ្នកបច្ចេកទេសអាជ្ញាធរជាតិអប្សរា។ ឯក្រុមកម្មករមានមនុស្សទាំងអស់៦២នាក់។ ក្នុងនោះមានមេជាង, មេជាងជួសជុលប្រាសាទ និងរកថ្ម, អ្នកគូរបន្ទំ, អ្នកជួសជុលថ្ម, អ្នកដាប់ក្បាច់, អ្នកបើកឡានស្ទូច។ គម្រោងមាន៣ដំណាក់កាល ៖

- ដំណាក់កាលទី១ចាប់ផ្តើមនៅថ្ងៃទី២៨ ខែមិថុនា និងចប់នៅថ្ងៃទី១៨ ខែធ្នូ ២០១៩។ ផែនការយើងគឺសិក្សាស្រាវជ្រាវឯកសារចាស់ៗពាក់ព័ន្ធនឹងការអភិរក្សប្រាសាទដែលមានពីមុនមក, ចុះបញ្ជីថ្មដែលនៅរាយប៉ាយជុំវិញប្រាសាទ, ជ្រើសរើសថ្ម និងរៀបផ្គុំសាកល្បង, ធ្វើកំណាយសិក្សាពិនិត្យស្ថានភាពគ្រឹះ, សម្រង់បន្ទំប្រាសាទ, រុះរើថ្មចាប់ពីដំបូលចុះរហូតដល់គ្រឹះ និងការជួសជុលថ្មដែលបែកបាក់។

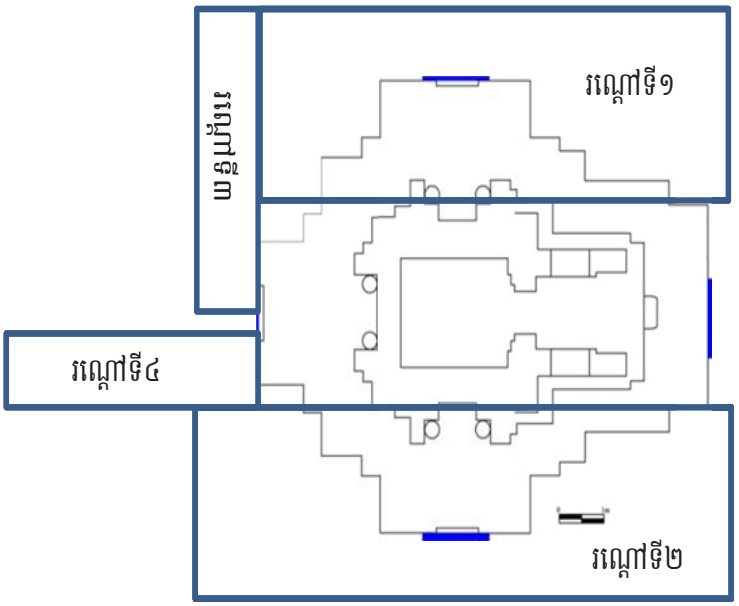
- ដំណាក់កាលទី២អនុវត្តនៅឆ្នាំ២០២០។ យើងផ្តោតលើការជួសជុល និងពង្រឹងគ្រឹះ ព្រមទាំងរៀបផ្គុំតួប្រាសាទឡើងវិញរហូតដល់ថ្នរួតទី១៥។

- ដំណាក់កាលទី៣នឹងត្រូវអនុវត្តនៅឆ្នាំ២០២១។ យើងនឹងបន្តរៀបតម្រើងតួប្រាសាទចាប់ពីថ្នរួតទី៨០ រហូតដល់ដំបូល (ផ្នែកលើបំផុត)។ ក្រៅពីនេះយើងនឹងសិក្សាស្រាវជ្រាវរៀបចំប្រព័ន្ធទឹកឡើងវិញ ព្រមទាំងដាប់ក្បាច់ត្រង់កន្ទែងណាដែលគួរធ្វើ។

៣.១. ដំណាក់កាលឆ្នាំ (២០១៩)

យើងធ្វើកំណាយតែនៅជុំវិញខឿនប្រាសាទកណ្តាលប៉ុណ្ណោះ។ គោលបំណងគឺដើម្បីពិនិត្យរចនាសម្ព័ន្ធគ្រឹះប្រាសាទ, រកប្រព័ន្ធទឹក, និងបង្ហាញឲ្យឃើញរូបរាងដើមរបស់ខឿននិងកម្រាលថ្មបាយក្រៀមជុំវិញ (រូបលេខ១២-១៦)។ ក្នុងកំណាយនេះ រណ្តៅមាន៤ ៖

- *រណ្តៅទី១នៅជាប់ខឿនខាងជើង។ ទំហំ ៖ ១០.៩០ម. x ៤.៦០ម., ជម្រៅ ៖ ០.៥៤ម.*
- *រណ្តៅទី២នៅជាប់ខឿនខាងត្បូង។ ទំហំ ៖ ១២.៥០ម. x ៤.៣០ម., ជម្រៅ ៖ ០.៥០ម.*
- *រណ្តៅទី៣នៅជាប់ខឿនខាងលិច។ ទំហំ ៖ ៦.៨០ម. x ១.៩៦ម., ជម្រៅ ៖ ០.៥០ម.*
- *រណ្តៅទី៤នៅជាប់ខឿនខាងលិចជ្រុងខាងត្បូង។ ទំហំ ៖ ៣.០៦ម. x ១.៥០ម., ជម្រៅ ៖ ០.៣០ម.*

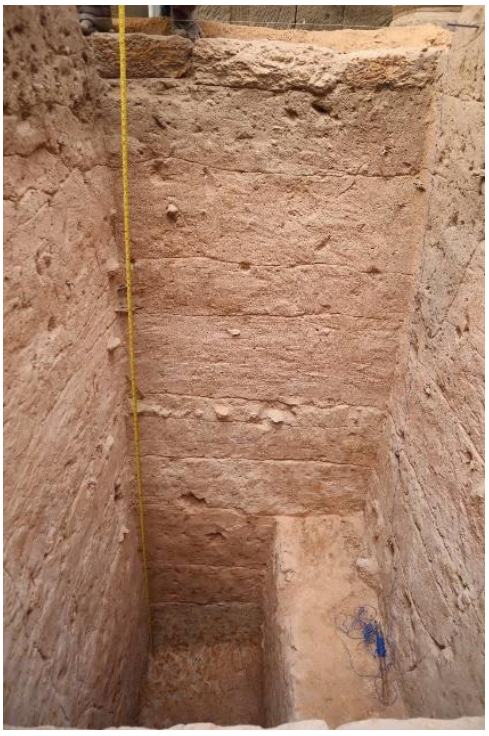


រូបលេខ១២ ប្លង់ទីតាំងរណ្តៅកំណាយទី១ ដល់ទី៤

រូបលេខ១៣ កំណាយនៅរណ្តៅទី១

រូបលេខ១៤ កំណាយរកឃើញថ្មកំពូលប្រាសាទ

រូបលេខ១៥ រណ្តៅកំណាយនៅជ្រុងខាងត្បូង ប្រាង្គកណ្តាល



រូបលេខ១៦ ស្ថានភាពគ្រឹះ ដីខ្សាច់ម៉ដ្ឋ លាយកំទេចថ្មភ្នំ

៣.១.១. ថ្មភក់ និងថ្មចាយគ្រែមកប់ជោកក្នុងដី

ចំពោះអ្នកបច្ចេកទេស ដែលត្រូវការយល់ដឹងជ្រៅជ្រះលម្អិតជាទីបំផុតនោះ យើងខ្ញុំសូមឲ្យអានរបាយការណ៍លម្អិតដែលមានតម្កល់ទុកនៅអាជ្ញាធរជាតិអប្សរា។ក្នុងក្របខណ្ឌនៃទស្សនាវដ្តី«ព្រះនគរ»នេះ យើងខ្ញុំសូមនិយាយពីការអភិរក្សប្រាសាទទន្ទេសួតយ៉ាងសង្ខេប ល្មមតែឲ្យយល់អំពីដំណើរការព្រមទាំងលទ្ធផលទូទៅ។

- យើងបានរកឃើញថ្មកក់និងថ្មចាយគ្រែមច្រើនដុំនៅតាមរណ្តៅនីមួយៗ ដែលសុទ្ធសឹងជាគ្រឿងបង្គុំនៃប្រាង្គកណ្តាល។ ថ្មកក់ទាំងនោះនៅល្អ អាចយកទៅប្រើឡើងវិញបាន។ គេប្រើក្នុងរចនាសម្ព័ន្ធជញ្ជាំង, ដំបូល, ហោជាង, និងខឿនប្រាសាទកណ្តាល។ ថ្មចាយគ្រែមភាគច្រើននៅល្អ អាចយកទៅប្រើឡើងវិញបានដូចគ្នា។ គេប្រើជាកម្រាលតម្រៀបជុំវិញខឿនប្រាសាទឲ្យបានមាំ ការពារមិនឲ្យប្រាសាទរលំ និងការពារស្រទាប់ដីខ្សាច់គ្រឹះដែលគេបុកបង្ហាប់ដើម្បីបញ្ចៀសទឹក។

- ចំពោះស្រទាប់ដីនៃរណ្តៅនីមួយៗ សូមអានរបាយការណ៍លម្អិតដែលតម្កល់ទុកនៅអាជ្ញាធរជាតិអប្សរា។ ទីនេះគ្រាន់តែសូមជម្រាបថាការធ្វើកំណាយនេះ យើងសិក្សាអំពីស្ថានភាពគ្រឹះរបស់ប្រាង្គកណ្តាល ដើម្បីជួសជុល និងពង្រឹងគ្រឹះឡើងវិញ។

៣.១.២. វត្ថុជាជាដែលប្រែធ្លាយ

ក្នុងរណ្តៅផ្សេងៗ ជាពិសេសរណ្តៅទី៤ ដែលជ្រៅជាងគេរហូតដល់ស្រទាប់ដីធម្មជាតិ យើងបានឃើញបំណែកក្បឿងជាច្រើនដែលជាផ្នែកមួយនៃស្ថាបត្យកម្ម។ ក្រៅពីនេះ យើងបានជួបប្រទះវត្ថុផ្សេងៗទៀតដែរដូចជាបំណែកប្រតិមានិងបំណែកភាជន៍។

ក. ក្បឿង ៖ ក្បឿងនៅទីនេះពុំមានស្រទាប់រលោងទេ ហើយមាន៤ប្រភេទ គឺក្បឿងផ្ងារ, ក្បឿងផ្តាប់, ក្បឿងរងស្បូវ និងក្បឿងលម្អព្រុំដំបូល។[1]

- ក្បឿងផ្ងារ ៖ ទំហំ ២៨ស.ម. x ១៨ស.ម./១៥ស.ម., កម្រាស់មធ្យម ៖ ១៥ស.ម.
- ក្បឿងផ្តាប់ ៖ ទំហំ ២៨ស.ម. x ១៣ស.ម./១០ស.ម., កម្រាស់មធ្យម ៖ ១៥ស.ម.
- ក្បឿងរងស្បូវ ៖ យើងឃើញមានតែ២បំណែកប៉ុណ្ណោះ ហើយអាចសន្និដ្ឋានបានថាមានលក្ខណៈស្រដៀងគ្នានឹងក្បឿងរងស្បូវរកឃើញនៅតាមឡដុតភាជន៍សម័យបុរាណនានា ក្នុងខេត្តសៀមរាប។

រូបលេខ១៧ បំណែកក្បឿងផ្ងារផ្នែកខាងក្រៅ

រូបលេខ១៨ បំណែកក្បឿងផ្តាប់ផ្នែកខាងក្នុង

រូបលេខ១៩ បំណែកក្បឿងរងស្បូវផ្នែកខាងក្រៅ

រូបលេខ២០ បំណែកក្បឿងរងស្បូវផ្នែកខាងក្នុង

[1] ទាំង៤ប្រភេទនេះ មានការសិក្សានៅ អ៊ា ដារិទ្ធ ២០០០។

ខ. បំណែកភាជន៍ ៖ ភាជន៍ជាវត្ថុធ្វើពីដីដុតមានទំហំខុសៗគ្នា នៅលាយឡំជាមួយក្បឿង និងដុំថ្ម ប្រាសាទក្នុងជម្រៅចន្លោះពី៣៥ ទៅ៤៥ស.ម. ពីផ្ទៃដីបច្ចុប្បន្ន។ ភាជន៍ទាំងនោះមានច្រើនប្រភេទ និងស្ថិតក្នុងសម័យកាលខុសៗគ្នា។

- ភាជន៍ផុយ ៖ បំណែកភាជន៍ផុយមានដូចជា បំណែកបាត, តួខ្លួន, មាត់, និងបំណែកចំពួយ។ មាត់មានកម្រាស់ក្រាស់ ពុំសូវមានក្បាច់លម្អទេ ហើយភាគច្រើនផ្ទៃខាងក្រៅគ្រើម ពណ៌ក្រហមក្រម៉ៅ និងស្នោត។ ផ្ទៃកលើកម្រាស់ និងទម្រង់មាត់ យើងអាចសន្និដ្ឋានថាបំណែកទាំងនោះអាចជាឆ្នាំង, ក្រឡ, ថ្វាង ឬពាង ជាដើម (រូបលេខ២១)។

- ភាជន៍រឹង ៖ ភាជន៍រឹងនៅទីនេះមានពីរយ៉ាង។ ភាជន៍ដែលឥតមានស្រទាប់រលោងសុទ្ធសឹងជាបំណែកដូចជាខ្លួន, បាត និងមាត់។ យើងសន្និដ្ឋានថាបំណែកទាំងនោះជាបំណែកក្រឡ, ពាង និងថូជាដើម។ ចំណែកភាជន៍រឹងមានស្រទាប់រលោងច្រើនមានពណ៌ស្នោត (រូបលេខ២២)។

- ភាជន៍នាំចូលពីប្រទេសក្រៅ ៖ បំណែកព័រសឺឡែនដែលរកឃើញជាប្រភេទចានក្រឡមានផ្ទៃសនិងប្រផេះៗ បំណែកខ្លះមានលម្អដោយក្បាច់ឬរូបភាពពណ៌ខៀវ។ បំណែកភាជន៍មួយចំនួនទៀតមានស្រទាប់រលោងពណ៌លឿងស្រអាប់។ យើងឃើញមានបំណែកតែមួយគត់ ដែលមានស្រទាប់រលោងពណ៌បៃតង និងមានក្បាច់ឆ្នូតៗ។ ភាជន៍ទាំងនេះប្រហែលនាំចូលមកប្រាសាទទន្ទេសួតនៅសម័យក្រោយអង្គរ ប្រហែលចន្លោះស.វ.ទី១៦ និង១៧។

រូបលេខ២១ បំណែកភាជន៍ផុយ

រូបលេខ២២ បំណែកភាជន៍រឹងផ្ទៃកខាងក្រៅ

គ. បំណែកប្រតិមា

- បំណែកដងខ្លួន ៖ នៅក្នុងរណ្តៅទី១ យើងបានរកឃើញបំណែកចម្ងាក់ដងខ្លួនធ្វើអំពីថ្មកក់នៅជ្រុងឦសាននៃប្រាង្គកណ្តាល ក្នុងជម្រៅ៣៥ស.ម.ពីផ្ទៃដីបច្ចុប្បន្ន។ រូបនេះជាចម្ងាក់ទោល មានកម្ពស់៦៤ស.ម.។ ក្រៅពីដងខ្លួន នៅសល់តែដៃធ្វេងត្រឹមដើមដៃ។

រូបលេ២៣ បំណែកដងខ្លួនមនុស្សផ្នែកខាងមុខ

រូបលេខ២៤ បំណែកដងខ្លួនមនុស្សផ្នែកខាងក្រោយ

- បំណែកជើងទ្វារបាល ៖ បំណែកនេះជាប្រអប់ជើងទ្វារបាលដែលយើងរកឃើញពេលធ្វើកំណាយនៅក្បែរកន្លែងរកឃើញដងខ្លួនកាលពីឆ្នាំ២០១៧ នៅមាត់កំពង់ទឹកខាងកើតខ្លោងទ្វារចូលចម្ងាយ២១ម.។ មានស្នាមគល់ដំបងមួយនៅចន្លោះប្រអប់ជើងទាំងពីរ។

រូបលេខ២៥ បំណែកជើងទ្វារបាល

រូបលេខ២៦ បំណែកជើងទ្វារបាល

៣.១.៣. ការងារបន្តបន្ទាប់មកទៀត

របាយការណ៍លម្អិតមានតម្កល់ទុកនៅអាជ្ញាធរជាតិអប្សរា។ ទីនេះជាសេចក្តីសង្ខេបប៉ុណ្ណោះ។ ការធ្វើជាបន្ទាប់មកមានការរៀបផ្គុំសាកល្បងដំបូលមណ្ឌប (រូបលេខ២៧-២៨)។

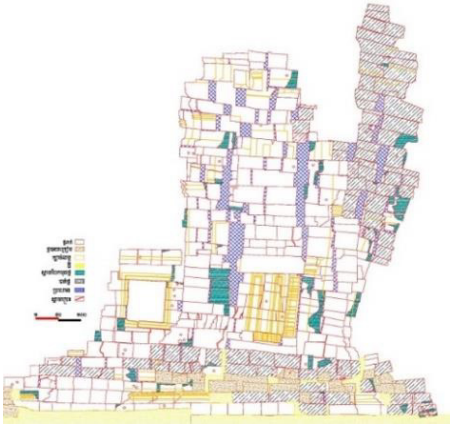
ប៉ុន្តែការសំខាន់បំផុត គឺត្រូវតែរុះរើប្រាង្គកណ្តាលដើម្បីរៀបឡើងវិញតាមគោលការណ៍ Anastylosis ព្រោះប្រាង្គនេះប្រឈមនឹងការដួលរលំជាស្ថាពរ។ ការងារនេះចាប់ផ្តើមពីសម្រង់ឫង់ដែលទាក់ទងនឹងរចនាសម្ព័ន្ធដំបូល, ជញ្ជាំង, ខឿនកម្រាលបាត, និងកម្រាលថ្មបាយក្រៀមជុំវិញតួប្រាសាទផ្នែកខាងក្រៅ។ ថ្មមួយដុំៗដែលរើសុទ្ធតែមានចុះលេខ។

រូបលេខ២៧ ការជ្រើសរើសថ្ម និងរៀបផ្គុំសាកល្បងថ្មដំបូល

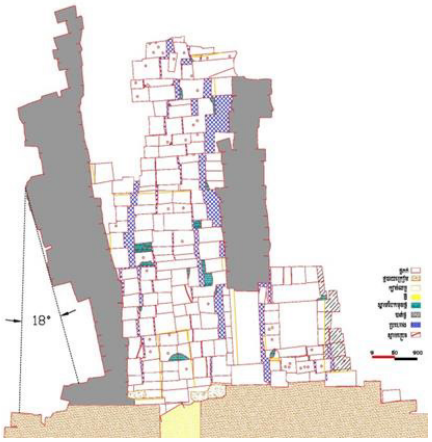
រូបលេខ២៨ រៀបផ្គុំសាកល្បងថ្មជញ្ជាំងនិងរនាំងស្បូរ

រូបលេខ២៩ តម្លើងរន្ធាដៃកការពារលំនឹងថ្ម និងគូរបូង់

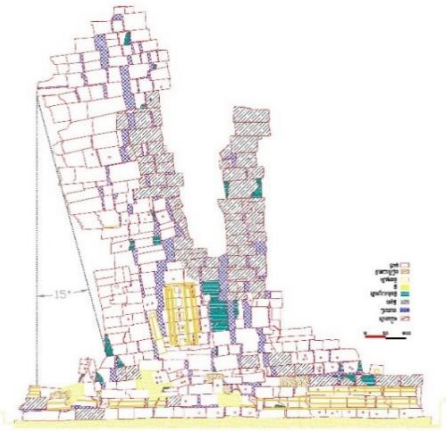
រូបលេខ៣០ ធ្វើសម្រង់បូង់ជញ្ជាំង



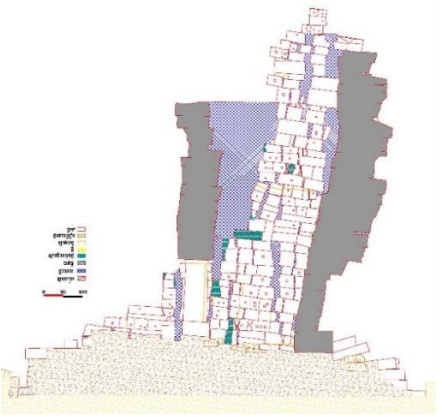
រូបលេខ៣១ បូង់ជញ្ជាំងខាងជើងផ្នែកខាងក្រៅ



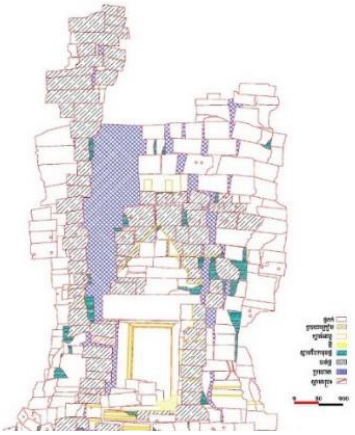
រូបលេខ៣២ បូង់ជញ្ជាំងខាងជើងផ្នែកខាងក្នុង



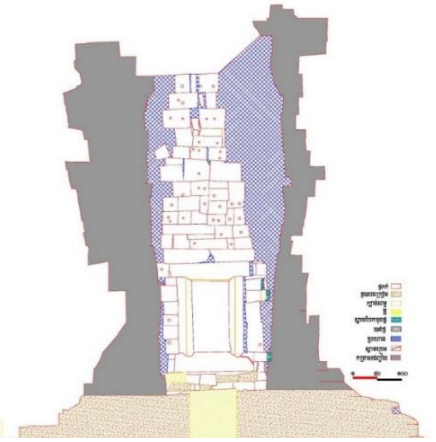
រូបលេខ៣៣ ប្លង់ជញ្ជាំងខាងត្បូងផ្នែកខាងក្រៅ



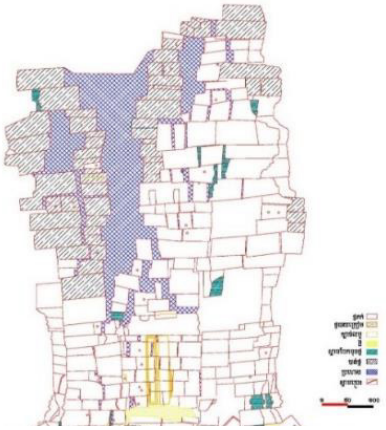
រូបលេខ៣៤ ប្លង់ជញ្ជាំងខាងត្បូងផ្នែកខាងក្នុង



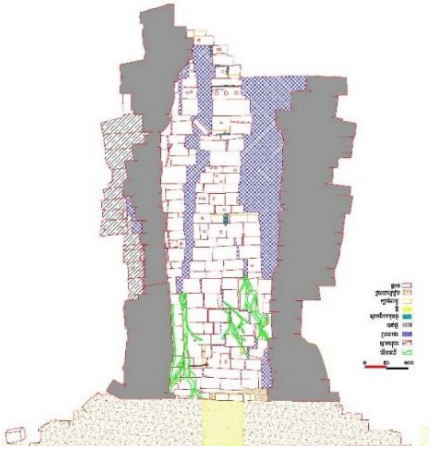
រូបលេខ៣៥ ប្លង់ជញ្ជាំងខាងកើតផ្នែកខាងក្រៅ



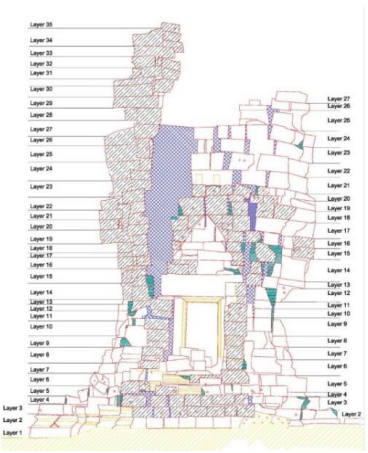
រូបលេខ៣៦ ប្លង់ជញ្ជាំងខាងកើតផ្នែកខាងក្នុង



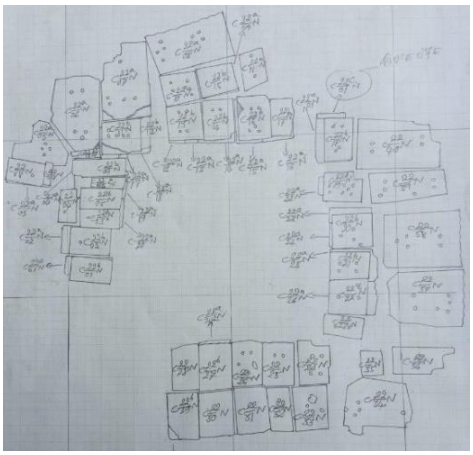
រូបលេខ៣៧ ប្លង់ជញ្ជាំងខាងលិចផ្នែកខាងក្រៅ



រូបលេខ៣៨-១ ប្លង់ជញ្ជាំងខាងលិចផ្នែកខាងក្នុង



រូបលេខ៣៨-២ ឫងំជញ្ជាំងខាងលិចផ្នែកខាងក្នុង



រូបលេខ៣៩ ឫងំប្រាសាទ២

រូបលេខ៤០ ចុះលេខសម្គាល់លើប្លុកទី១៣

រូបលេខ៤១ សកម្មភាពរើថ្មប្រាង្គកណ្តាល

រូបលេខ៤២ ស្ថានភាពថ្មកម្រាលបាតប្រាសាទប្លុកទី១១

ថ្មជញ្ជាំងមានបីជួរ ៖ ជួរក្នុង, ជួរកណ្តាល, និងជួរក្រៅ។ នៅជ្រុងអាគ្នេយ៍ និងពាយព្យ ផ្នែកខាងលើរលុះធ្លាក់ស្ទើរទាំងស្រុង។ ថ្មដែលសល់នៅជ្រុងនិរតី និងជ្រុងវាយ៉ាបែកបាក់ ពុកផុយ និងរំកិលចេញពីទីតាំងដើម។ ជញ្ជាំងទ្រេតខ្លាំងទៅជ្រុងខាងលិច និងខាងជើង ហើយបាត់លំនឹងស្ទើរទាំងស្រុង។ ការរុះរើថ្មធ្វើឡើងពីផ្នែកដំបូលចុះមកក្រោមរហូតដល់គ្រឹះប្រាសាទ ពោលគឺរើថ្មចាប់ពីរួតទី៣៧ (រួតលើបង្អស់) ចុះរហូតដល់រួតទី៥ (រួតក្រោមបំផុត) នៃរចនាសម្ព័ន្ធប្រាង្គកណ្តាល។ នៅក្រោមរួតទី៥ គឺជាស្រទាប់គ្រឹះ សាងពីដីខ្សាច់ម៉ដ្ឋពណ៌លឿងថ្លាដែលបុកបង្ក្រាប់យ៉ាងណែន លាយកំទេចថ្មភ្នំ ដោយផ្សែមជាមួយទឹក។

ក. ការរកឃើញនៅប្រាង្គកណ្តាល

- ដែកទាម ៖ យើងបានរកឃើញចំនួន៤។ ដែកទាមនីមួយៗមានស្រទាប់ការពារខាងក្រៅអំពីសំណ និងបាយអរ។ ដែកនេះមានទាទីតភ្ជាប់ថ្មមួយដុំទៅមួយដុំទៀត ឬពីផ្តែរទ្វារជាប់នឹងថ្មខាងក្រោយ ដែលភាគច្រើនគេប្រើសម្រាប់ពង្រឹងរចនាសម្ព័ន្ធនៅតាមជ្រុង, កែង, ធ្នឹម, នាគចែង និងសសរពេជ្រ។។

- បាយអរ ៖ ឃើញតាមរន្ធថ្មនិងលើផ្ទៃថ្ម។ យើងមិនទាន់ដឹងសមាសធាតុផ្សំនៅឡើយទេ។

- ខួច ៖ ធ្វើអំពីដីដុត។ ឃើញក្នុងទបង្ហូរទឹកដែលស្ថិតលើថ្មកម្រាលបាតប្រាសាទ នៅរួតទី១១។

- ជ័រ ៖ ជាជ័រឈើ? រកឃើញស្លាកស្នាមលើផ្ទៃថ្ម។ ប្រហែលជាគេប្រើសម្រាប់ភ្ជាប់ថ្ម? ឬគេប្រើជ័រឈើលាយជាមួយបាយអរ សម្រាប់ដាក់បំពេញចន្លោះថ្មដែលមានផ្ទៃបាត ឬខ្នងថ្មដែលមិនរាបស្មើ។

- ស្លាកស្នាមគំនូសជាអក្សរ ឬជាបន្ទាត់ឈរនិងបន្ទាត់ដេក។ ឃើញមាននៅសល់លើផ្ទៃថ្មជញ្ជាំងប្រាង្គកណ្តាល។ យើងមិនទាន់ហ៊ានសន្និដ្ឋានពីតួនាទីប្រាកដ។

រូបលេខ៦៣ ដែកទាមរកឃើញនៅលើថ្មរួតទី១៧

រូបលេខ៦៤ ដែកទាមរកឃើញនៅលើថ្មរួតទី១៧

ខ. អភិរក្ស និងព្យាបាលថ្ម

នៅប្រាង្គកណ្តាល យើងជួបប្រទះថ្មមួយចំនួនដែលប្រេះស្រាំ បាក់បែក និងខ្វះទៀតពុកផុយដោយ

អាយុកាល និងបរិយាកាស។ ថ្មដែលទប់ទម្ងន់ខ្លាំងជាងគេដូចជាថ្មកម្រាល, ថ្មបាតជញ្ជាំង, ធ្នឹម, ផ្តែរ, សសរពេជ្រ ជាដើម គឺរងគ្រោះ និងប្រេះស្រាំខ្លាំងៗ ក្នុងការចុះបញ្ជីថ្មរាយប៉ាយជុំវិញប្រាង្គកណ្តាល យើងបានកំណត់ រួចស្រេចហើយអំពីកំរិតគុណភាពរបស់ថ្មដែលមានស្ថានភាពដូចគ្នាទៅនឹងថ្មខាងលើ។ ដូច្នេះចំពោះថ្ម រើចេញពីតួប្រាសាទយើងកំណត់កំរិតគុណភាពថ្មដូចគ្នាទៅនឹងពពួកថ្មរាយប៉ាយដែរ។

ក្នុងការជួសជុលនិងព្យាបាលថ្ម ដំបូងយើងសម្អាតនឹងទឹកសុទ្ធ រួចដាក់ហាលថ្ងៃឲ្យស្ងួតល្អ។ ឯកន្លែង មានស្នាមប្រេះបែកជាបំណែកតូចៗស្តើង យើងតភ្ជាប់គ្នាវិញដោយបិទការញើឈ្មោលប្រភេទ Sikadur 31។ ថ្មដែលបាក់ចាប់ពី២ទៅ៣បំណែកធំៗ យើងជួសជុលដោយស្ថានដាក់ឆ្នឹង Fiberglass ហើយចាក់បំពេញ រន្ធ និងបិទមុខថ្មដោយការប្រភេទ Sikadur 31 ដូចគ្នាដែរ។ ទំហំ Fiberglass មានផ្សេងៗគ្នា អាស្រ័យទៅតាម ទំហំរបស់ថ្ម។ ចំណែកការជួសជុលថ្មធំៗដូចជាធ្នឹម ឬផ្តែរ យើងប្រើឆ្នឹងដែកថែបមិនច្រេះ (Stainless steel) ហើយ បំពេញរន្ធ និងបិទមុខដោយប្រើការ Sikadur 31 ដូចគ្នា។ សរុបមក យើងបានសម្អាត និងព្យាបាលថ្មចំនួន ១៥៩ដុំដើម្បីយកទៅប្រើប្រាស់ឡើងវិញ។

រូបលេខ៦៥ សកម្មភាពអភិរក្សនិងព្យាបាលថ្មបែក

រូបលេខ៦៦ បាញ់ការបំពេញរន្ធថ្ម

៣.២. ដំណាក់កាលទី២ (២០២០)

នេះជាដំណាក់កាលនៃការជួសជុលពង្រឹងគ្រឹះ និងរៀបផ្គុំតួប្រាសាទឡើងវិញ។ កិច្ចការនេះធ្វើឡើងស្រប តាមអនុសាសន៍នៃអ្នកជំនាញការអង្គការយូណេស្កូ(សម័យប្រជុំបច្ចេកទេសលើកទី៣៣ និងសម័យប្រជុំពេញអង្គ លើទី២៦ កាលពីថ្ងៃទី១០ដល់១១ ខែធ្នូ ឆ្នាំ២០១៩)។ រចនាសម្ព័ន្ធគ្រឹះដែលជាទម្រសំខាន់របស់ប្រាង្គកណ្តាលអាច សន្មតថាមាន៣ស្រទាប់ ៖ ដីខ្សាច់គ្រឹះ, ថ្មជើងតាង, និងខឿន។ ទាំង៣ស្រទាប់នេះមានការខូចខាតច្រើន។ យើង មិនប៉ះពាល់ទេនូវអ្វីដែលមានគុណភាពល្អនៅឡើយ មានន័យថាការជួសជុលពង្រឹងផ្នែកទាំង៣ស្រទាប់ នេះធ្វើឡើងតាមផ្នែកៗដែលរងការខូចខាតខ្លាំងតែប៉ុណ្ណោះ។

៣.២.១. គ្រឹះច្រាសាទ

ក. ស្រទាប់ខ្សាច់គ្រឹះ

ខ្សាច់ម៉ដ្ឋពណ៌ផ្កាឈូកនេះ គេលាយជាមួយកំទេចថ្មភ្នំ (ទំហំពី៥ដល់១៥ស.ម.) បុកបង្ហាប់យ៉ាងណែន យកមកចាក់បំពេញរណ្តៅមួយជម្រៅ៣ម៉ែត្រ (ចុះដល់ស្រទាប់ដីឥដ្ឋធម្មជាតិ) ដែលមានប្រវែង១០ម៉ែត្រ ដើងត្បូងនិង ១៥ម៉ែត្រលិចកើត។ នៅជុំវិញខ្សាច់គ្រឹះមានដីឥដ្ឋដែលគេបុកបង្ហាប់កម្រាស់ប្រមាណ១ម៉ែត្រធ្វើជារបាំងរក្សាដីខ្សាច់បញ្ចៀសការហូរច្រោះ។ ផ្នែកខាងលើខ្សាច់គ្រឹះមានរៀបកម្រាលថ្មបាយក្រៀមស្តើងជុំវិញខឿនប្រាសាទសម្រាប់ការពារទឹកភ្ជៀងជាដើម។ ក្នុងការជួសជុលពង្រឹង យើងបានយកឫសឈើចេញជាពិសេសបានយកចេញនូវដីស្អុយ (ដីតក់ល្បាប់) ចុះរហូតដល់ស្រទាប់ដីខ្សាច់គ្រឹះដែលនៅមានគុណភាពល្អ។ ត្រង់ស្រទាប់ដីស្អុយដែលបានយកចេញ យើងបានយកដីខ្សាច់ថ្មី (កម្រាស់ពី៥ដល់១០ស.ម.) មកជំនួស និងរៀបដុំថ្មបាយក្រៀមពីលើ (ថ្មជើងតាង)។

រូបលេខ៦៧ គំនូរបច្ចន់ពុះជើងត្បូងតួកណ្តាល: បង្ហាញពីសម្ភារនិងបច្ចេកទេសរៀបចំគ្រឹះ

ខ. ជើងតាង

ស្រទាប់ទី២ស្ថិតនៅលើស្រទាប់ខ្សាច់គ្រឹះនេះ ជាស្រទាប់ថ្មបាយក្រៀមដែលមាននាទីទ្រថ្មខឿនប្រាសាទ។ ទំហំថ្ម១ដុំៗមានពី ៦០ស.ម. x ៣០ស.ម. x ១៥ស.ម. ដល់ ៦០ស.ម. x ៣៥ស.ម. x ២៥ស.ម.។ ថ្មជើងតាងនៅត្រង់ជ្រុងខាងកើត (ក្រោមជណ្តើរ) រក្សាបាននូវស្ថានភាពដើម។ ដូច្នេះយើងមិនបានប៉ះពាល់ទេ។ ការជួសជុលធ្វើឡើងតែនៅជ្រុងខាងត្បូង ខាងលិច និងខាងជើង ដែលជាផ្នែកទ្រុឌទ្រោមខ្លាំង។

អ្នកជំនាញការនៃអង្គការយូណេស្កូ បានអនុញ្ញាតឲ្យពង្រីកជើងតាងឲ្យបានធំជាមុន មានន័យថាត្រូវដាក់បន្ថែមថ្មថ្មី និងវាតទីចេញពីខឿនឲ្យបានធំជាងមុន៣០ស.ម. នៅត្រង់កន្លែងដែលរងការខូចខាតនិងស្រុត។ កន្លែងដែលថ្មនៅល្អ គឺយើងរក្សាទុកដដែល។ ថ្មបាយក្រៀមថ្មីដែលត្រូវប្រើសម្រាប់ជួសជុល និងបន្ថែមថ្មជើងតាងមានទំហំធំហើយក្រាស់ជាងថ្មចាស់។ យើងប្រើដើម្បីលើកជើងតាងឲ្យស្មើកំពស់ដើមវិញ។

រូបលេខ៦៨ ការជួសជុលពង្រឹងជើងតាងនៅជ្រុងខាងលិចប្រាង្គកណ្តាល

គ. ខឿន

ដីខ្សាច់គ្រឹះខឿនស្ថិតនៅលើជើងតាងរហូតដល់ផ្នែកកម្រាលបាតប្រាសាទ ឡើងលើរហូតដល់ផ្នែកថ្មកម្រាលប្រាសាទ ហើយចែកចេញជា៦ផ្នែក។ នៅផ្នែកទី១ គេរៀបខឿនថ្មបាយក្រៀមនៅពីក្រោយកន្ទុយថ្មកក់ខឿន។ ទី២ គេរៀបថ្មបាយក្រៀមនៅចំផ្នែកខាងក្រោមនៃតួប្រាសាទតែប៉ុណ្ណោះ (ត្រឹមផ្នែកក្រោមជើងជញ្ជាំ និងកណ្តាលតួប្រាសាទ)។ គេយកដីខ្សាច់ និងកំទេចថ្មភ្នំ លាយបង្គាប់ចូលគ្នាដើម្បីបំពេញចន្លោះថ្មខឿីផ្នែកក្រៅ និងផ្នែកក្នុង។ នៅផ្នែកខាងលើដីខ្សាច់ និងកំទេចថ្មភ្នំ មានក្រាលថ្មបាយក្រៀមចំនួនមួយស្រទាប់ ទើបគេក្រាលថ្មកក់ពីខាងលើ។

ស្ថានភាពទូទៅមានការទ្រុឌទ្រោមខ្លាំង លើកលែងតែនៅចំកណ្តាលជណ្តើរខាងកើត។

ការរៀបចំឡើងវិញតម្រូវឲ្យក្រុមជាងមានទេពកោសល្យ ចំណេះដឹង និងបទពិសោធន៍ច្រើនលើការងារជួសជុល និងរៀបថ្ម ធ្វើយ៉ាងណាផ្គុំថ្មកម្រាលទាំងអស់ឲ្យត្រូវតាមល្បាក់ដើម ចូលទៅតាមលំអានដើមវិញ។ យើងប្រើម៉ាស៊ីនសម្រាប់រាស់កំពស់ដោយយោងតាមចំណុចគោលរបស់រចនាសម្ព័ន្ធថ្មខឿន ដែលស្ថិតនៅចំកណ្តាលជណ្តើរខាងកើត។ថ្មបាយក្រៀមមួយចំនួនតម្រូវឲ្យយកថ្មីមកជំនួស(ទំហំ៖១០០x៥០x៤៥ស.ម. និង ៦០ x ៥០ x ៤៥ស.ម.)។

រូបលេខ៤៩ ដាក់បំពេញថ្មបាយក្រៀមនៅក្នុងខឿន

រូបលេខ៥០ ដាក់បំពេញថ្មបាយក្រៀមនៅក្នុងខឿន

រូបលេខ៥១ រៀបផ្គុំថ្មកក់ខឿនផ្នែកខាងក្រៅនៅជ្រុងអាគ្នេយ៍

រូបលេខ៥២ ខឿនថ្មបាយក្រៀមផ្នែកខាងក្នុងបន្ទាប់ពីរៀបផ្គុំរួច

៣.២.២. ចាតច្រាសាទ

នេះជារចនាសម្ព័ន្ធមួយផ្សេងទៀតដែលស្ថិតនៅស្រទាប់ទី៤ សង់អំពីថ្មកក់ គឺនៅលើថ្មបាយក្រៀមខឿនខាងក្នុងប្រាសាទ។ នៅខាងក្នុងមណ្ឌប (បន្ទប់តូចនៃច្រកចូលខាងមុខប្រាង្គកណ្តាល) ថ្មកម្រាលបាតប្រាសាទមាន២ស្រទាប់។ ចំណែកនៅក្នុងបន្ទប់ធំនិងផ្នែកជុំវិញនោះគេរៀបចំថ្មកម្រាលតែមួយស្រទាប់ប៉ុណ្ណោះ

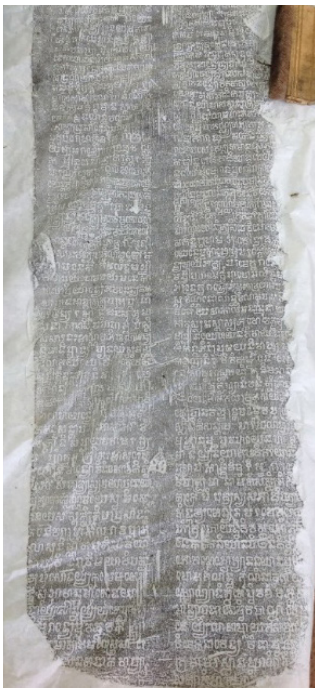
ឲ្យនៅផ្ទាល់នឹងថ្មបាយក្រៀមផ្នែកខឿនតែម្តង។

ក្នុងការជួសជុលនេះ យើងបានប្រទះឃើញសិលាចារឹកមួយផ្ទាំងនៅនឹងថ្មកម្រាល កម្ពស់១០០ស.ម. ទទឹង៤០ស.ម.និងកម្រាស់២០ស.ម. ដាក់នៅពីក្រោមស៊ុមទ្វារទី១ (ស៊ុមខាងមុខ)។ សិលាចារឹកនេះប្រហែលពុំមែនជាសិលាចារឹករបស់ប្រាសាទទន្ទេសួតទេ ប៉ុន្តែអាចជាថ្មចារឹកគេយកចេញពីប្រាសាទណាមួយនៅជិតប្រាសាទទន្ទេសួត ដើម្បីយកមកបំពេញកម្រាលបាតប្រាសាទនេះទៅវិញ។ សិលាចារឹកនេះចារជាភាសាសំស្ក្រឹត មាន៥៥បន្ទាត់។ មានបាត់បង់ពាក្យនៅផ្នែកដើមនិងចុងបន្ទាត់។ គេបានបង់លេខ K.១៤៥៩ ក្នុងបញ្ជីសារពើភ័ណ្ឌសិលាចារឹកខ្មែរ (ដោយក្រុមអ្នកសិក្សាស្រាវជ្រាវសិលាចារឹកខ្មែរនៃសាលាបារាំងចុងបូព៌ា)។

រូបលេខ២៧ ការជ្រើសរើសថ្មនិងរៀបផ្គុំសាកល្បងថ្មដំបូល

រូបលេខ២៨ រៀបផ្គុំសាកល្បងថ្មជញ្ជាំងនិងរងស្បូវ

រូបលេខ៥៥ សិលាចារឹក រកឃើញនៅប្រាសាទទន្ទេសួត ខែមិថុនា ឆ្នាំ២០២០ និងបុះលេខK.១៤៥៩



រូបលេខ៥៦ ផ្តិតសិលាចារឹក K.១៤៥៩

៣. ៣. ការរៀបផ្គុំតួប្រាសាទ

ពាក្យថាតួប្រាសាទនៅទីនេះ គឺរាប់ចាប់ពីផ្នែកជើងជញ្ជាំងឡើងដល់កំពូលប្រាសាទ (ថ្នរួតទី១២ដល់រួតទី៤០)។ ក្រោយពីរៀបចំថ្មកម្រាលចប់សព្វគ្រប់នៅចុងខែកក្កដា ឆ្នាំ២០២០ យើងបន្តរៀបផ្គុំតួប្រាសាទ ដោយចាប់ផ្តើមរៀបផ្គុំស៊ុមទ្វារទី២ (ស៊ុមខាងក្នុងនៃប្រាង្គកណ្តាល)[៦] គ្រឿងបង្គុំស៊ុមនេះនៅគ្រប់ទាំងអស់ ពោលគឺផ្នែកលើ ផ្នែកក្រោម និងផ្នែកបញ្ឈរទាំងពីរ។ យើងបានកំណត់ជាឯកច្ឆន្ទយកស៊ុមទី២ ធ្វើជាគោលការណ៍សម្រាប់បន្តទៅស៊ុមទ្វារបញ្ឆោតខាងត្បូង ខាងជើង ហើយទល់គ្នានៅស៊ុមខាងលិច។

ការងារនេះតម្រូវឲ្យមានការសាកល្បងច្រើនដងដើម្បីល្បាក់និងថ្មេរឬបានត្រឹមត្រូវគត់មត់ឡើងវិញ។ ចំណុចសំខាន់មួយទៀត គឺត្រូវធ្វើយ៉ាងណាឲ្យធ្នឹមលើ, សសរពេជ្រ, និងផ្តែរត្បូតស៊ីគ្នា មុននឹងផ្គុំថ្មរួតបន្តបន្ទាប់រហូតដល់កំពូលប្រាសាទ។ យើងប្រើថ្មថ្មីតែពេលណាដែលរកថ្មចាស់មិនឃើញ ឬក៏ថ្មចាស់នោះពុកផុយខ្លាំងមិនអាចព្យាបាលបាន។

ដំណើរការរៀបផ្គុំតួប្រាសាទចំណាយពេលប្រមាណ៥ខែ (គិតទាំងថ្ងៃសៅរ៍ និងអាទិត្យ) ហើយប្រើកម្លាំងពលកម្មសរុប៦១នាក់។ ក្នុងនោះមានអ្នកស្វែងរកថ្ម៥នាក់ អ្នកជញ្ជូនថ្ម៨នាក់ អ្នកចង់ថ្មសម្រាប់ឡានស្ទួច២នាក់ អ្នកបើកឡានស្ទួច២នាក់ អ្នករៀបផ្គុំថ្ម១៣នាក់ អ្នកជួសជុលថ្ម៤នាក់ អ្នកគូរប្លង់៤នាក់ អ្នកដាក់ដែកទាម៣នាក់។

រូបលេខ៥៧ រៀបផ្គុំតម្លើងស៊ុមទ្វារខាងក្នុងនៃប្រាង្គកណ្តាល

រូបលេខ៥៨ រៀបផ្គុំផ្នែកជើងជញ្ជាំងនៅជ្រុងឦសាន

[៦] *មូលហេតុដែលយើងមិនរៀបផ្គុំស៊ុមទី១មុន ព្រោះស៊ុមនេះសល់តែផ្នែកខាងក្រោមប៉ុណ្ណោះចំណែកស៊ុមបញ្ឈរទាំងពីរនិងស៊ុមខាងលើបាត់រកមិនឃើញ។*

រូបលេខ៥៩ រៀបផ្គុំសសរពេជ្រ និងផ្តែរ

រូបលេខ៦០ ប្រាង្គកណ្តាលពេលដំណើរការជួសជុល

រូបលេខ៦១ ប្រាង្គកណ្តាលមុនជួសជុល

រូបលេខ៦២ ប្រាង្គកណ្តាលបន្ទាប់ពីការជួសជុល

ទិសដៅការងារបន្ត

ដំណាក់កាលទី៣គ្រោងនឹងធ្វើឆ្នាំ២០២១។ ក្រុមការងារមានផែនការដូចជា ៖

- បន្តរៀបចំធ្វើមុខថ្មកក់ថ្មី ដែលដាក់បំពេញត្រង់ផ្នែកខឿនជ្រុងខាងត្បូង, ខាងលិច, និងខាងជើង ប្រាង្គកណ្តាលហើយត្រូវដាប់ខ្សែក្បាច់ឲ្យមានលំនាំប្រហាក់ប្រហែលទៅនឹងខ្សែក្បាច់ចាស់ ប៉ុន្តែមិនទ្វាក់លម្អិតនូវក្បាច់ទាំងអស់ទេ ។

- សិក្សាស្វែងរកប្រព័ន្ធទឹកបុរាណ និងរៀបចំជួសជុលឡើងវិញ។

- ធ្វើកំណាយសម្អាតកំណកដីជុំវិញខ្វោងទ្វារចូលខាងកើត និងហោត្រៃ។ ទី៤ ប្រមូល និងរៀបចំថ្មរាយប៉ាយឲ្យមានសណ្តាប់ធ្នាប់។ ទី៥ តាមដាន និងថែទាំដំណើរប្រែប្រួលនៃរចនាសម្ព័ន្ធប្រាង្គកណ្តាលបន្ទាប់ពីជួសជុលរួច។

ឯកសារយោង

- *ហៃ ហ៊ុនឡេង, ២០០១, ការសិក្សាអំពីកុលាលភាជន៍សម័យសម្បូណាំព្រៃគុក (ប្រកេទកុម្ភការកណ្តា) ភ្នំពេញ (និក្ខេបបទបញ្ចប់បរិញ្ញាបត្របុរាណវិទ្យា)។*
- *ចាប សោភាវ៉ា និង ធាយ វិសុទ្ធ, ២០០២, កុលាលភាជន៍ឡអន្ទង់ជ័ំ, ភ្នំពេញ, (និក្ខេបបទបញ្ចប់បរិញ្ញាបត្របុរាណវិទ្យា)។*
- *អ៊ុន វឌ្ឍនាការ, ព្រឹម បូ, ជា សារិទ្ធ, ២០០០, កុលាលភាជន៍ជៅច្រាសាទស្ងួរព្រំត្រងិងជៅវត្តភជម្ពូណាំ (ខ្មែរ ចិន សៀម វៀតណាម) ភ្នំពេញ (និក្ខេបបទបញ្ចប់បរិញ្ញាបត្របុរាណវិទ្យា)*
- *អ៊ា ជារិទ្ធ, ២០០០, សង្ខេបទិន្នន័យថ្មីៗនៃកុលាលភាជន៍ខ្មែរ, ឧស្សជាវដ្តីឧច័យ, លេខ១, ទំ. ៣៧-៤៧។*
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